SAMSUNG

User Manual

SyncMaster
C24A650X
C27A650X
C24A650U
C27A650U

The color and the appearance may differ depending on the product, and the specifications are subject to change without prior notice to improve the performance.

BN46-00083B-01

Copyright

The contents of this manual are subject to change without notice to improve quality.

© 2011 Samsung Electronics

Samsung Electronics owns the copyright for this manual.

Use or reproduction of this manual in parts or entirety without the authorization of Samsung Electronics is prohibited.

The SAMSUNG and SyncMaster logos are registered trademarks of Samsung Electronics.

Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.

VESA, DPM and DDC are registered trademarks of the Video Electronics Standards Association.

- An administration fee may be charged if either
  - (a) an engineer is called out at your request and there is no defect in the product (i.e. where you have failed to read this user manual).
  - (b) you bring the unit to a repair centre and there is no defect in the product (i.e. where you have failed to read this user manual).
- The amount of such administration charge will be advised to you before any work or home visit is carried out.

Icons used in this manual

	The following images are for reference only. Real-life situations may differ from what is shown in the images.

Symbols for safety precautions

Warning	A serious or fatal injury may result if instructions are not followed.
Caution	Personal injury or damage to properties may result if instructions are not followed.

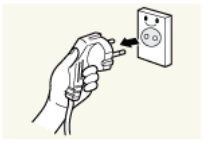
	Activities marked by this symbol are prohibited.
	Instructions marked by this symbol must be followed.

Cleaning

Cleaning

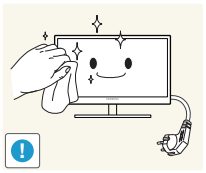
Exercise care when cleaning as the panel and exterior of advanced LCDs are easily scratched.

Take the following steps when cleaning.



1. Power off the monitor and computer.
2. Disconnect the power cord from the monitor.

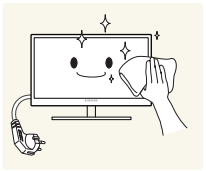
Hold the power cable by the plug and do not touch the cable with wet hands. Otherwise, an electric shock may result.



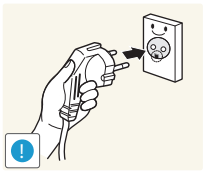
3. Wipe the monitor with a clean, soft and dry cloth.

- Do not apply a cleaning agent that contains alcohol, solvent, or surfactant to the monitor.

- Do not spray water or detergent directly on the product.



4. Wet a soft and dry cloth in water and wring thoroughly to clean the exterior of the monitor.

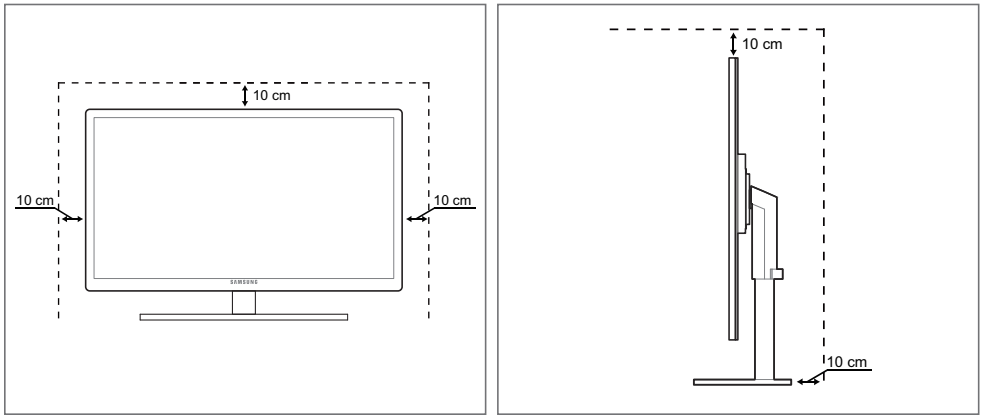


5. Connect the power cord to the product after cleaning the product.
6. Power on the monitor and computer.

Securing the Installation Space

- Ensure some space around the product for ventilation. A rise in the internal temperature may cause a fire and damage the product. Be sure to allow the amount of space as shown below or greater when installing the product.

The exterior may differ depending on the product.



Precautions for storage

High-glossy models can develop white stains on the surface if an ultrasonic wave humidifier is used nearby.

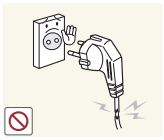
Be sure to contact Samsung Customer Service Center (108page) if the inside of the monitor needs cleaning. (service fee will be charged).

Safety Precautions

Electricity and Safety

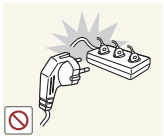
The following images are for reference only. Real-life situations may differ from what is shown in the images.

Warning



Do not use a damaged power cord or plug, or a loose power socket.

- An electric shock or fire may result.

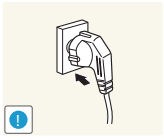


Do not plug many products into the same power socket.

- Otherwise, the socket may overheat and cause a fire.

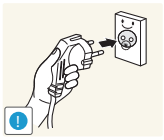
Do not touch the power plug with wet hands.

- Otherwise, an electric shock may result.



Insert the power plug all the way in so it is not loose.

- An unstable connection may cause a fire.



Connect the power plug to a grounded power socket (type 1 insulated devices only).

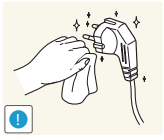
- An electric shock or injury may result.

Do not bend or pull the power cord with force. Do not weigh the power cord down with a heavy object.

- A damaged power cord may cause an electric shock or fire.

Do not place the power cord or product near heat sources.

- An electric shock or fire may result.



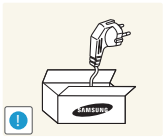
Remove foreign substances such as dust around the plug pins and power socket with a dry cloth.

- Otherwise, a fire may result.

Caution

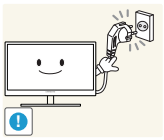
Do not unplug the power cord when the product is in use.

- The product may become damaged by an electric shock.



Do not use the power cord for products other than authorized products supplied by Samsung.

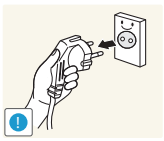
- An electric shock or fire may result.



Keep the power socket where the power cord is connected unobstructed.

- If any problem occurs in the product, unplug the power cable to completely cut the power to the product.

  Power to the product cannot be completely cut off with the power button.

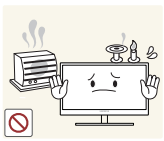


Hold the plug when disconnecting the power cord from the power socket.

- An electric shock or fire may result.

Installation

Warning



DO NOT PLACE CANDLES, INSECT REPELLANTS OR CIGARETTES ON TOP OF THE PRODUCT. DO NOT INSTALL THE PRODUCT NEAR HEAT SOURCES.

- Otherwise, a fire may result.

Avoid installing the product in a narrow space with bad ventilation, such as a bookshelf or wall closet.

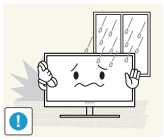
- Otherwise, a fire may result due to an increased internal temperature.

Keep the plastic packaging bag for the product in a place that cannot be reached by children.

- Children may suffocate.

Do not install the product on an unstable or vibrating surface (insecure shelf, sloped surface, etc.).

- The product may fall and break or cause a personal injury.
- Using the product in an area with excess vibration may damage the product or cause a fire.



Do not install the product in a vehicle or a place exposed to dust, moisture (water drips, etc.), oil, or smoke.

- An electric shock or fire may result.

Do not expose the product to direct sunlight, heat, or a hot object such as a stove.

- Otherwise, the product lifespan may be reduced, or a fire may result.

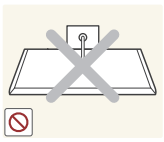
Do not install the product within the reach of young children.

- The product may fall and injure children.

Caution

Take care not to drop the product when moving it.

- Otherwise, product failure or personal injury may result.

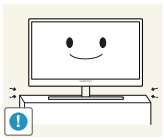


Do not set down the product on its front.

- The screen may become damaged.

When installing the product on a cabinet or shelf, make sure that the bottom edge of the front of the product is not protruding.

- The product may fall and break or cause a personal injury.
- Install the product only on cabinets or shelves of the right size.



Put down the product carefully.

- The product may fall and break or cause a personal injury.

Installing the product in an unusual place (a place exposed to a lot of fine particles, chemical substances or extreme temperatures, or an airport or train station where the product should operate continuously for an extended period of time) may seriously affect its performance.

- Be sure to consult Samsung Customer Service Center (108page) before installation if you want to install the product at such a place.

Operation

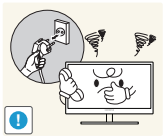
Warning

High voltage runs through the product. Do not attempt to disassemble, repair, or modify the product on your own.

- An electric shock or fire may result.
- Contact Samsung Customer Service Center (108page) for repair.

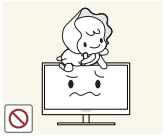
Before you move the product, be sure to turn off the power switch and remove all the cables connected to the product, including the power cord and the antenna cable.

- Otherwise, the power cord may be damaged and a fire or electric shock may result.



If the product generates a strange noise, a burning smell, or smoke, remove the power cord immediately and contact Samsung Customer Service Center (108page).

- An electric shock or fire may result.



Do not let children hang from the product or climb on top of it.

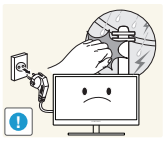
- The product may fall, and your child may become injured or seriously harmed.

If the product falls or the exterior is damaged, power off the product, remove the power cord, and contact Samsung Customer Service Center (108page).

- Otherwise, an electric shock or fire may result.

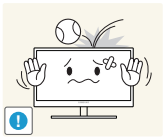
Do not put a heavy object, toy, or sweets on top of the product.

- The product or heavy objects may fall as children try to reach for the toy or sweets resulting in a serious injury.



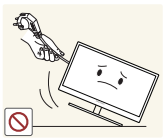
During a lightning or thunderstorm, remove the power cord and do not touch the antenna cable.

- An electric shock or fire may result.



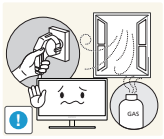
Do not drop objects on the product or apply impact.

- An electric shock or fire may result.



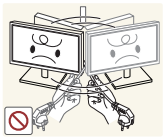
Do not move the product by pulling the power cord or any cable.

- Otherwise, the power cable may be damaged and product failure, an electric shock or fire may result.



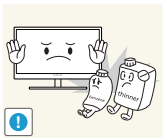
If a gas leakage is found, do not touch the product or power plug. Also, ventilate the area immediately.

- Sparks can cause an explosion or fire.
- During a lightning or thunderstorm, do not touch the power cord or antenna cable.



Do not lift or move the product by the power cord or any cable.

- Otherwise, the power cable may be damaged and product failure, an electric shock or fire may result.



Do not use or keep combustible spray or an inflammable substance near the product.

- An explosion or fire may result.

Ensure the vents are not blocked by tablecloths or curtains.

- Otherwise, a fire may result from an increased internal temperature.

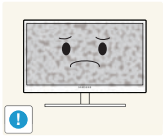
Do not insert a metallic object (a chopstick, coin, hair pin, etc.) or inflammable object (paper, match, etc.) into the vent or ports of the product.

- If water or any foreign substance enters the product, be sure to power off the product, remove the power cord, and contact Samsung Customer Service Center (108page).
- Product failure, an electric shock or fire may result.

Do not place objects containing liquid (vases, pots, bottles, etc) or metallic objects on top of the product.

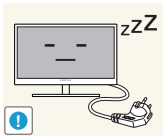
- If water or any foreign substance enters the product, be sure to power off the product, remove the power cord, and contact Samsung Customer Service Center (108page).
- Product failure, an electric shock or fire may result.

Caution



Leaving the screen fixed on a stationary image for an extended period of time may cause afterimage burn-in or defective pixels.

- If you are not going to use the product for an extended period of time, activate power-saving mode or a moving-picture screen saver.

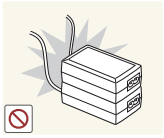


Disconnect the power cord from the power socket if you do not plan on using the product for an extended period of time (vacation, etc).

- Otherwise, a fire may result from accumulated dust, overheating, an electric shock, or electric leakage.

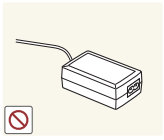
Use the product at the recommended resolution and frequency.

- Your eyesight may deteriorate.



Do not put DC power adapters together.

- Otherwise, a fire may result.



Remove the plastic bag from the DC power adapter before you use it.

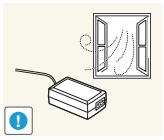
- Otherwise, a fire may result.

Do not let water enter the DC power device or get the device wet.

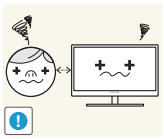
- An electric shock or fire may result.
- Avoid using the product outdoors where it can be exposed to rain or snow.
- Be careful not to get the DC power adapter wet when you wash the floor.

Do not put the DC power adapter near to any heating apparatus.

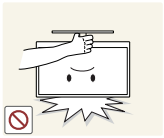
- Otherwise, a fire may result.



Keep the DC power adapter in a well-ventilated area.



Looking at the screen too close for an extended period of time can deteriorate your eyesight.

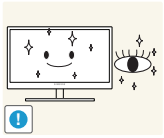


Do not hold the monitor upside-down or move it by holding the stand.

- The product may fall and break or cause a personal injury.

Do not use humidifiers or stoves around the product.

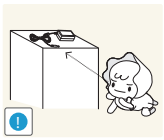
- An electric shock or fire may result.



Rest your eyes for more than 5 minutes for every 1 hour of product use.

- Eye fatigue will be relieved.

Do not touch the screen when the product has been turned on for an extended period of time as it will become hot.



Store the small accessories used with the product out of reach of children.

Exercise caution when adjusting the product angle or stand height.

- Otherwise, children's fingers or hands may become stuck and injured.
- Tilting the product excessively may cause it to fall and result in personal injury.

Do not place heavy objects on the product.

- Product failure or personal injure may result.

Correct posture to use the product

Use the product in the correct posture as follows:

- Straighten your back.
- Allow a distance of 45 to 50cm between your eye and the screen, and look slightly downward at the screen.

  Keep your eyes directly in front of the screen.
- Adjust the angle so light does not reflect on the screen.
- Keep your forearms perpendicular to your upper arms and level with the back of your hands.
- Keep your elbows at about a right angle.
- Adjust the height of the product so you can keep your knees bent at 90 degrees or more, your heels attached to the floor, and your arms lower than your heart.

Table Of Contents

BEFORE USING THE PRODUCT

2 **Copyright**
2 Icons used in this manual
2 Symbols for safety precautions

4 **Cleaning**
4 Cleaning
5 Securing the Installation Space
5 Precautions for storage

5 **Safety Precautions**
5 Electricity and Safety
7 Installation
9 Operation

13 **Correct posture to use the product**

PREPARATIONS

19 **Checking the Contents**
19 Removing the Packaging
20 Checking the Components

22 **Parts**
22 Frontal Buttons
24 Reverse Side

26 **Installation**
26 Attaching the Stand
27 Adjusting the Product Tilt and Height
27 Rotating the Monitor
28 Attaching and detaching the wireless-connection dongle (Rx)
29 Installing a Wall-mount Kit or Desktop Stand
30 Anti-theft Lock

31 **"MagicRotation Auto"**

USING "HUB MONITOR"

32 **About "HUB Monitor"**

33 **Software Installation for Using "HUB Monitor"**
33 Installing "Samsung HUB Monitor Setup"

Table Of Contents

35 **Connecting the Product to a PC to Use "HUB Monitor"**
35 Connecting to a PC via **Wireless USB**
39 Connecting to a PC via the **USB** Cable

40 **Utilizing "HUB Monitor"**
40 Using the Product as a **USB HUB**
42 Connecting to a **LAN**

43 **Configuring the HUB Monitor IP**
43 Dynamic IP
44 Static IP

47 **Notice before your use of Wireless USB or USB Mode**

CONNECTING AND USING A SOURCE DEVICE

48 **Before Connecting**
48 Pre-connection Checkpoints

49 **Connecting and Using a PC**
49 Connecting to a PC
51 Driver Installation
52 Setting Optimum Resolution
53 Changing the Resolution Using a PC

56 **Connecting Headphones**

57 **Connecting the Power**

SCREEN SETUP

58 **MAGIC**
58 **SAMSUNG MAGIC Bright**
60 **SAMSUNG MAGIC Color**

61 **Brightness**
61 Configuring **Brightness**

62 **Contrast**
62 Configuring **Contrast**

63 **Sharpness**
63 Configuring **Sharpness**

Table Of Contents

64 **Coarse**
64 Adjusting **Coarse**

65 **Fine**
65 Adjusting **Fine**

66 **Response Time**
66 Configuring **Response Time**

CONFIGURING TINT

67 **Red**
67 Configuring **Red**

68 **Green**
68 Configuring **Green**

69 **Blue**
69 Configuring **Blue**

70 **Color Tone**
70 Configuring the **Color Tone** Settings

71 **Gamma**
71 Configuring **Gamma**

RESIZING OR RELOCATING THE SCREEN

72 **Image Size**
72 Changing the Picture **Size**

73 **H-Position & V-Position**
73 Configuring **H-Position** & **V-Position**

74 **Menu H-Position & Menu V-Position**
74 Configuring **Menu H-Position** & **Menu V-Position**

Table Of Contents

SETUP AND RESET

75 HUB
75 Auto Wireless Detection
76 Wireless Connection
77 USB Connection
78 Analog
79 HDMI
80 USB Super Charging
80 Wireless ID

81 ECO
81 Eco Motion Sensor
83 Eco Light Sensor
86 Eco Saving
87 Eco Icon Display

89 Menu Transparency
89 Changing **Menu Transparency**

90 Language
90 Changing the **Language**

91 PC/AV Mode
91 Configuring **PC/AV Mode**

92 Auto Source
92 Configuring **Auto Source**

93 Display Time
93 Configuring **Display Time**

94 Key Repeat Time
94 Configuring **Key Repeat Time**

95 Customized Key
95 Configuring **Customized Key**

96 Off Timer On/Off
96 Configuring **Off Timer On/Off**

97 Off Timer Setting
97 Configuring **Off Timer Setting**

Table Of Contents

98 Reset
98 Initializing Settings (**Reset**)

INFORMATION MENU AND OTHERS

99 INFORMATION
99 Displaying **INFORMATION**
99 Configuring Brightness in the Startup Screen

TROUBLESHOOTING GUIDE

100 Requirements Before Contacting Samsung Customer Service Center
100 Testing the Product
100 Checking the Resolution and Frequency
101 Check the followings.
103 Q & A

SPECIFICATIONS

104 General
106 PowerSaver
107 Standard Signal Mode Table

APPENDIX

108 Contact SAMSUNG WORLDWIDE
110 Correct Disposal of This Product (Waste Electrical & Electronic Equipment)
111 Terminology

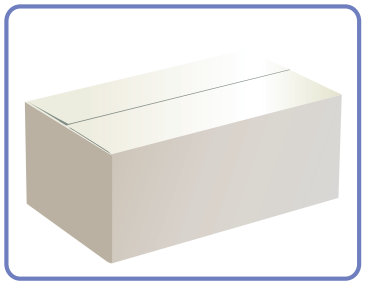
INDEX

1 Preparations

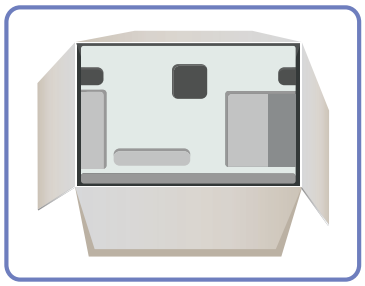
1.1 Checking the Contents

1.1.1 Removing the Packaging

1 Open the packaging box. Be careful not to damage the product when you open the packaging with a sharp instrument.

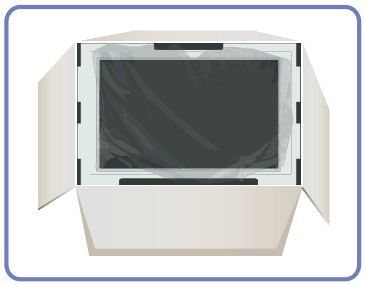


2 Remove the Styrofoam from the product.



3 Check the components and remove the Styrofoam and plastic bag.

- The appearance of actual components may differ from the image shown.
- This image is for reference only.

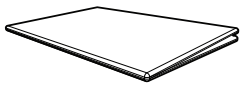


4 Store the box in a dry area so that it can be used when moving the product in the future.

1.1.2 Checking the Components

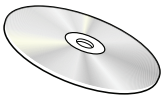
- Contact the dealer from whom you purchased the product if any item is missing.
- The appearance of the components and items sold separately may differ from the image shown.

Components

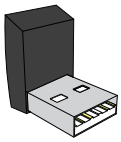


Quick setup guide

Warranty card
(Not available in all locations)

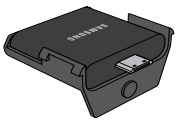


User manual



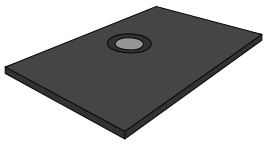
Wireless Connection Dongle(Tx)

(Sold separately for C24A650U and C27A650U models)

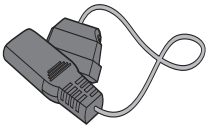


Wireless Connection Dongle(Rx)

(Sold separately for C24A650U and C27A650U models)

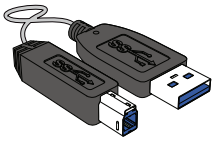


Stand base

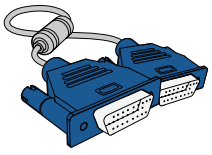


Power cable

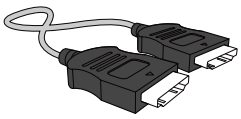
DC power adapter



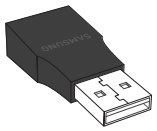
USB 3.0 cable



D-SUB cable



HDMI cable (optionally)



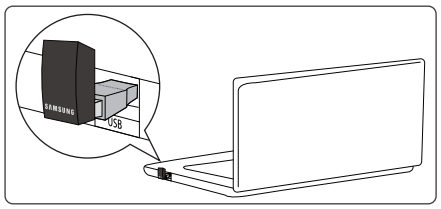
USB gender changer

(Sold separately for C24A650U and C27A650U models)

Components may differ in different locations.

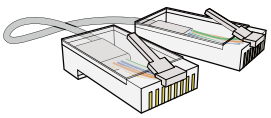
USB gender changer (Sold separately for C24A650U and C27A650U models)

When the wireless-connection dongle cannot connect to your notebook PC, connect it using the USB gender changer.

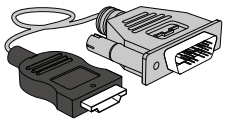


Items sold separately

The following items can be purchased at your nearest retailer.



LAN cable

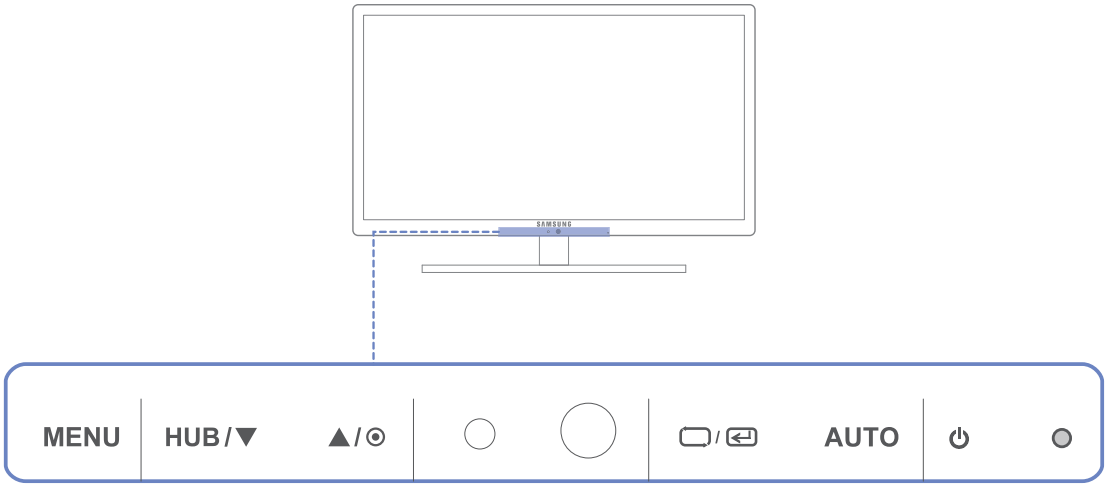


HDMI-DVI cable

1.2 Parts

1.2.1 Frontal Buttons

The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

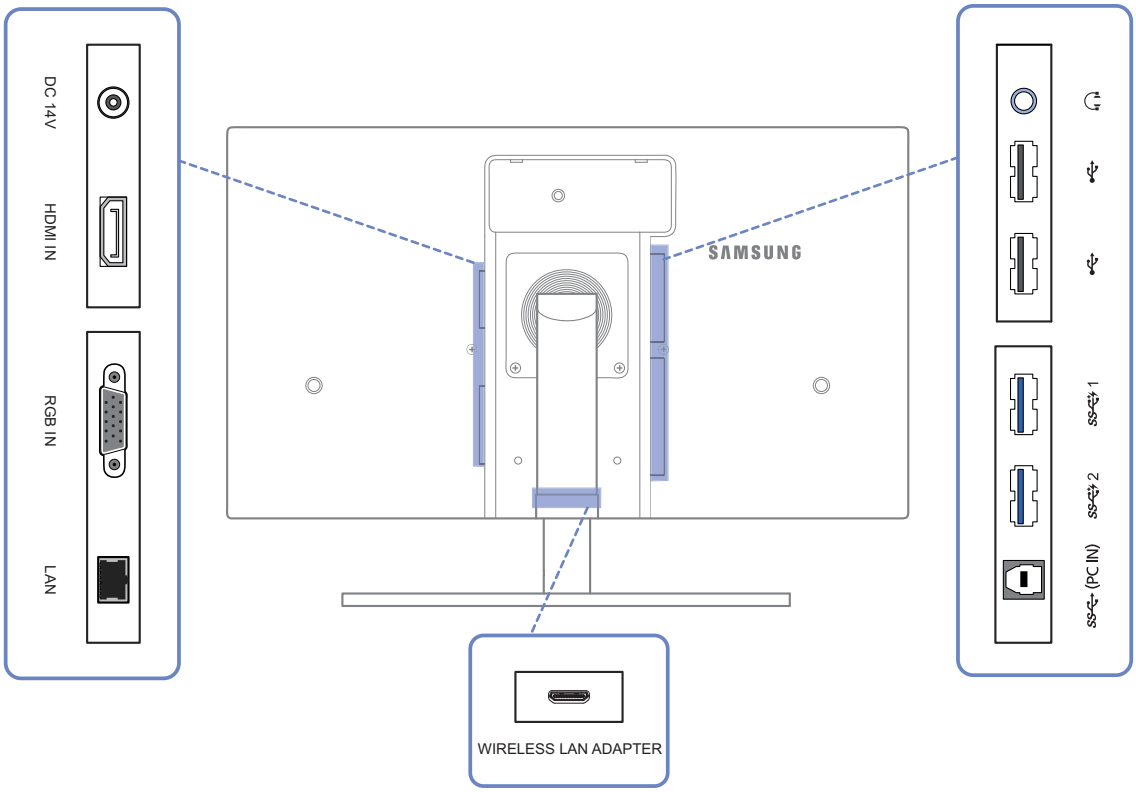


Icons	Description
MENU	• Open or close the onscreen display (OSD) menu, or return to the last menu. • OSD control lock: Maintain the current settings, or lock the OSD control to prevent unintended changes to settings. To lock the OSD control, press the MENU button [MENU] for five seconds. To unlock the locked OSD control, press the MENU button [MENU] for more than five seconds. If the OSD control is locked, • Brightness and Contrast can be adjusted, and INFORMATION can be viewed. • The function that was configured as Customized Key before locking the OSD control can be used by pressing the [HUB] button.

Icons	Description
HUB	Configure Customized Key and press [HUB]. The following options will be enabled. HUB - ECO - MAGIC - Image Size To configure Customized Key, go to SETUP&RESET → Customized Key and select the mode you want.
▲/▼	Move to the upper or lower menu or adjust the value for an option on the OSD menu.
◉	Adjust the screen brightness. Volume (VOL) can be adjusted if a cable is connected to the [HDMI IN] port.
▭/↵	Confirm a menu selection. Pressing the [▭/↵] button when the OSD menu is not displayed will change the input source (Wireless USB/USB/Analog/HDMI). If you power on the product or change the input source by pressing the [▭/↵] button, a message that shows the changed input source will appear at the top left corner of the screen.
AUTO	Press the [AUTO] button to automatically adjust the screen settings. • Available only in Analog mode. • Changing the resolution in Display Properties will activate the Auto Adjustment function.
⏻	Turn the screen on or off.
○ (Power Indicator)	The power indicator will be lit when the product is operating normally. • Refer to "10.2 PowerSaver" for details about the power-saving function. • To reduce power consumption, it is best to remove the power cable when you will not be using the product for an extended period of time. • The power LED will turn red if a wireless communication connection is established.

1.2.2 Reverse Side

The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

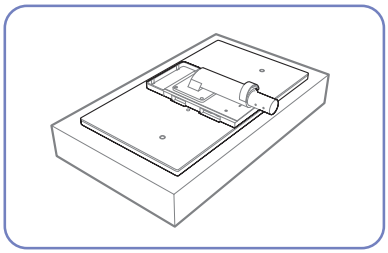


Port	Description
	Connects to the DC power adapter.
	Connects to a source device using an HDMI cable.
	Connects to a PC using the D-SUB cable.
	Connects to a network using the LAN cable.
	Connects to an audio output device such as headphones.
	Connects to a source device via a USB cable. Compatible with a USB cable version 2.0 or lower.
	Connects to a source device via a USB cable. Compatible with a USB cable version 3.0 or lower.

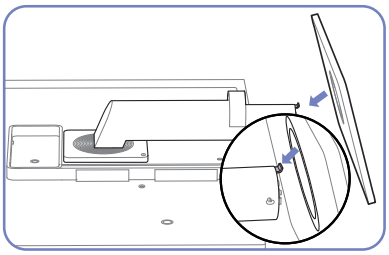
Port	Description
	Connects to a PC via a USB cable. This port can only connect to a PC.
	Connect to the wireless-connection dongle (Rx).

1.3 Installation

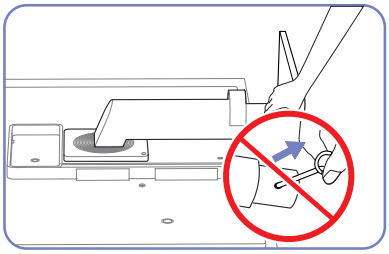
1.3.1 Attaching the Stand



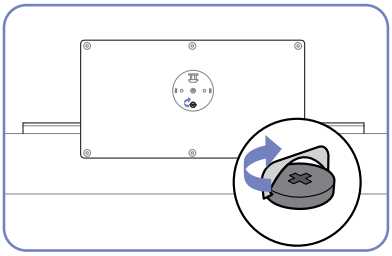
Place a protective cloth or cushion on a flat surface. Next, place the product with the face down on top of the cloth or cushion.



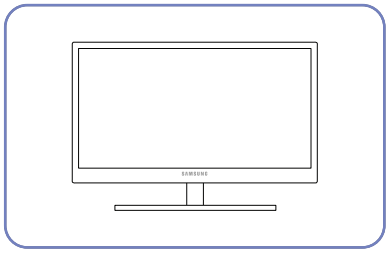
Insert the stand base into the stand in the direction of the arrow.



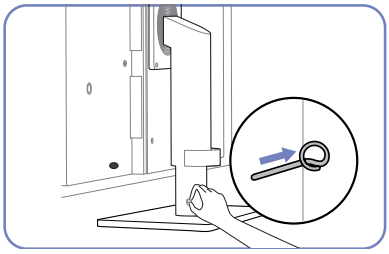
Do not remove the fixing pin until you are finished attaching the stand.



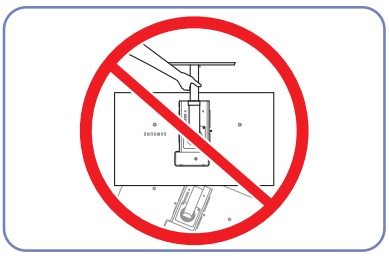
Tightly fasten the screw to the bottom of the base.



After installing the stand, place the product upright.



You can remove the fixing pin and adjust the stand now.



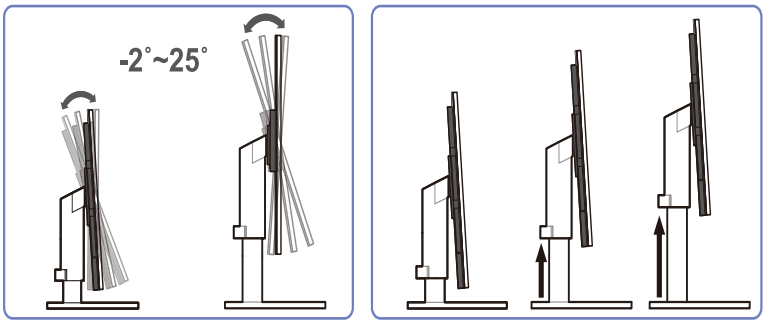
- Caution

Do not hold the product upside down only by the stand.

The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

1.3.2 Adjusting the Product Tilt and Height

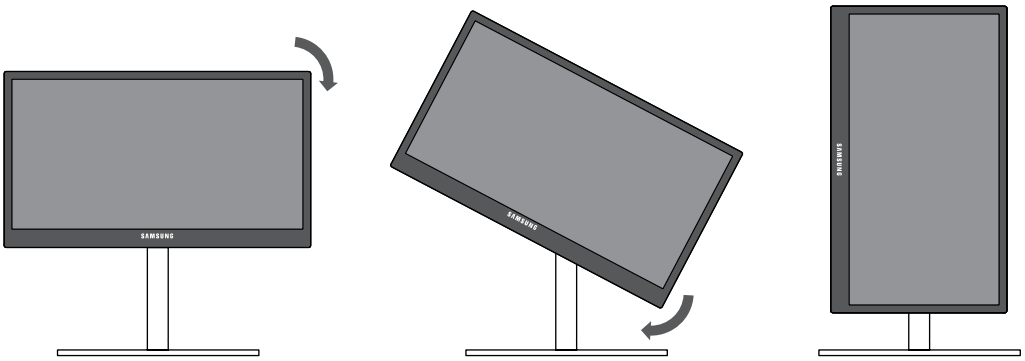
The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



- To adjust the height, remove the fixing pin.
- The monitor tilt and height can be adjusted.
- Hold the top center of the product and adjust the height carefully.

1.3.3 Rotating the Monitor

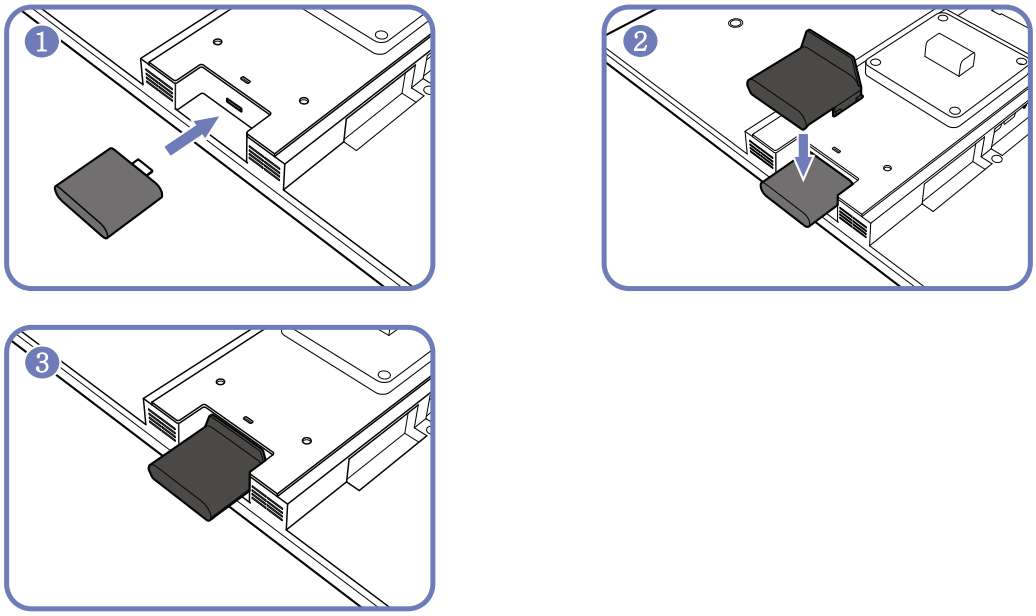
You can rotate your monitor as shown below.



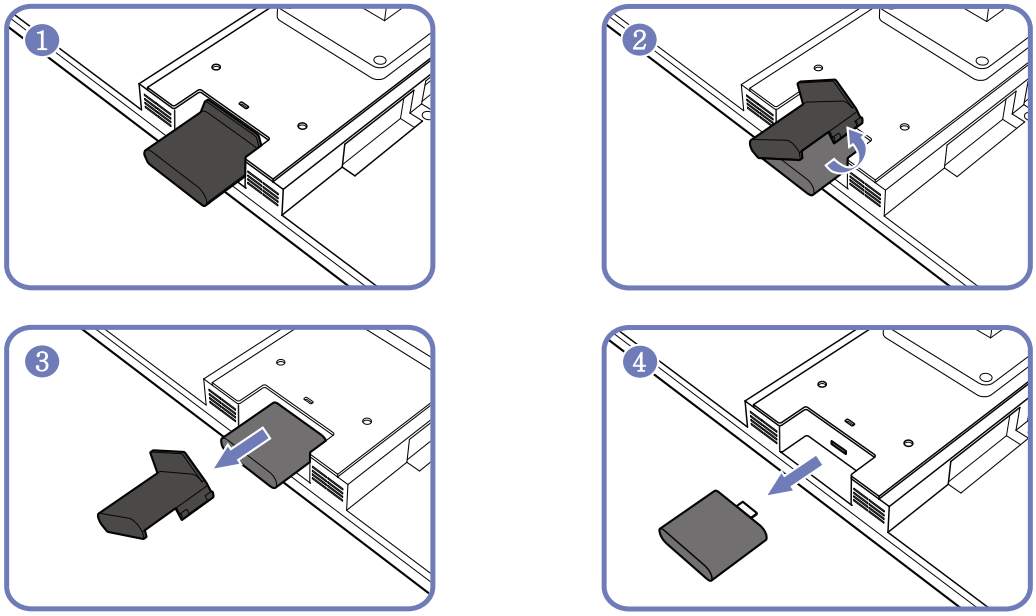
- Be sure to fully extend the stand before rotating the monitor.
- If you rotate the monitor without fully extending the stand, the corner of the monitor may hit the floor and get damaged.
- Do not rotate the monitor counterclockwise. The monitor may get damaged.

1.3.4 Attaching and detaching the wireless-connection dongle (Rx)

Attaching the wireless-connection dongle (Rx)



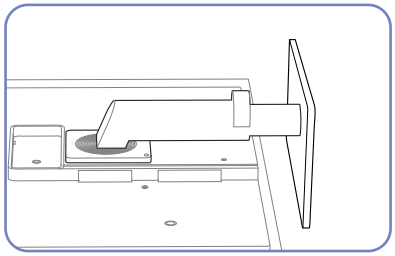
Detaching the wireless-connection dongle (Rx)



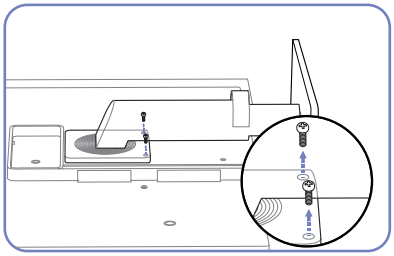
1.3.5 Installing a Wall-mount Kit or Desktop Stand

Before Installation

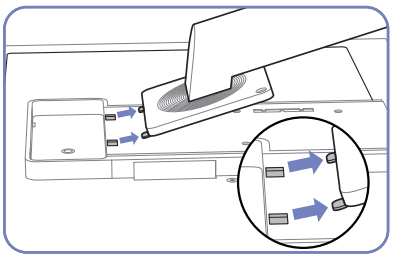
Power the product off and remove the power cable from the power socket.



Place a protective cloth or cushion on a flat surface. Next, place the product with the face down on top of the cloth or cushion.

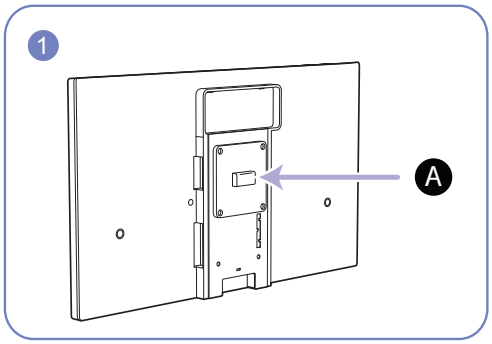


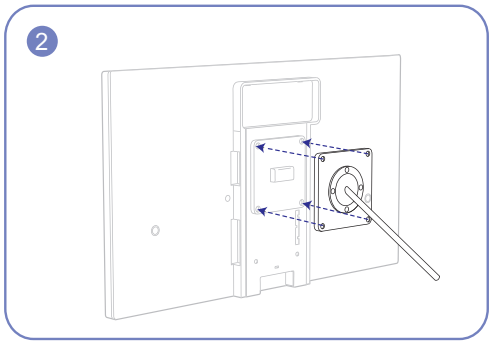
Unfasten the screw from the back of the product.

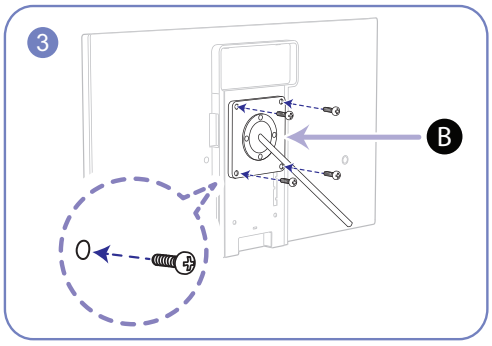


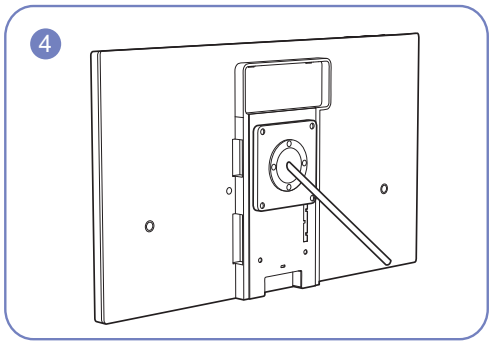
Lift and detach the stand.

Installing a Wall-mount Kit or Desktop Stand









A Attach the wall-mount kit or desktop stand here

B Bracket (sold separately)

Align the grooves and tightly fasten the screws on the bracket on the product with the corresponding parts on the wall-mount kit or desktop stand you want to attach.

Notes

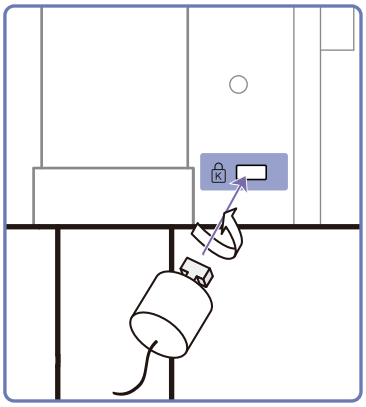
- Using a screw longer than the standard length can damage the internal components of the product.
- The length of screws required for a wall mount that does not comply with the VESA standards may vary depending on the specifications.
- Do not use screws that do not comply with the VESA standards. Do not attach the wall-mount kit or desktop stand using excessive force. The product may get damaged or fall and cause personal injury. Samsung shall not be held liable for any damage or injury caused by using improper screws or attaching the wall-mount kit or desktop stand using excessive force.
- Samsung shall not be held liable for any product damage or personal injury caused by using a wall-mount kit other than the one specified or from an attempt to install the wall-mount kit on your own.
- To mount the product on a wall, ensure you purchase a wall-mount kit that can be installed 10cm or farther away from the wall.
- Be sure to use a wall-mount kit that complies with the standards.

1.3.6 Anti-theft Lock

An anti-theft lock allows you to use the product securely even in public places. The locking device shape and locking method depend on the manufacturer. Refer to the user guide provided with your anti-theft locking device for details. The lock device is sold separately.

To lock an anti-theft locking device:

1. Fix the cable of your anti-theft locking device to a heavy object such as a desk.
2. Put one end of the cable through the loop on the other end.
3. Insert the locking device into the anti-theft lock slot at the back of the product.
4. Lock the locking device.



- An anti-theft locking device can be purchased separately.
- Refer to the user guide provided with your anti-theft locking device for details.
- Anti-theft locking devices can be purchased at electronics retailers or online.

1.4 "MagicRotation Auto"

The "MagicRotation Auto" function detects the rotation of monitors that are fitted with a rotation sensor and rotates the Windows screen accordingly.

[Software Installation]

1. Insert the user manual CD provided with the product into the CD-ROM drive.
2. Follow the instructions given on the screen to proceed with installation.

After installation, the on-screen display (OSD) menu will be displayed in the language of the operating system.

(This complies with the basic policies of Windows.)

[Caution]

1. Compatible only with Windows 7 (32 bits or 64 bits)
2. Compatible with a graphics card that complies with the DDC/CI and MS API standards

   With a graphics card that does not comply with the aforementioned standards, the "MagicRotation Auto" function may not be available.
3. To maximize the performance of the function, update the graphics card driver to the latest version.
4. Fourteen languages are available as installation languages.

   English, Français, Deutsch, Magyar, Italiano, Polski, Português
   Русский, Español, Svenska, Türkçe, 日本語, 汉语, 한국어
5. If the orientation is set to a mode other than "Landscape" in the screen resolution menu on Windows 7, the "MagicRotation Auto" function may not work properly.
6. The OSD menu will be displayed if the monitor is rotated. When the monitor is rotated, the screen reconfiguration process may be displayed or screen burn-in may appear, depending on the graphics card. This is performed by the Windows operating system and has nothing to do with the product.
7. If you do not want the screen to rotate automatically when the monitor is rotated, press the Windows and L keys at the same time to lock the Windows operating system. If the operating system cannot be locked, it is due to the constraints of Windows API and has nothing to do with the product.
8. This function is not available when the input source is Wireless USB or USB.

2 Using "HUB Monitor"

You can use the "HUB Monitor" function by connecting the product to a PC through the Wireless USB function or a USB cable. "HUB Monitor" allows the product to function as a HUB so that you can control a connected device from the product without having to connect to a PC.

2.1 About "HUB Monitor"

"HUB Monitor" is a HUB system developed independently by Samsung and allows you to conveniently control a notebook PC that has a small screen and a limited number of input/output ports available.

Notebook or netbook computers offer portability but may prove inconvenient when used at the office or at home. Connecting a notebook PC to this product, which has the "HUB Monitor" function, allows you to view the small notebook PC screen on a larger screen. With the HUB function, you can control multiple devices at the same time from the notebook PC, even if the notebook PC has a limited number of input/output ports.

In particular, the high-tech Wireless USB feature allows you to connect a notebook PC to the product wirelessly and, from the product, enjoy various multimedia contents stored on the notebook PC.

You can also use triple monitors by configuring the display settings.

2.2 Software Installation for Using "HUB Monitor"

Install on your PC the software provided with the product.

To maximize the performance of your HUB Monitor, visit www.samsung.com and upgrade the driver periodically.

2.2.1 Installing "Samsung HUB Monitor Setup"

This software is needed to use the HUB Monitor function. Software installation may be affected by the graphics card, motherboard, or network conditions of the PC.

1. Insert the installation CD into the CD-ROM drive.
2. Click the "Installing the Software" button.
3. Click the "Samsung HUB Monitor Setup" installation program.
4. Check the model name indicated on the label at the bottom right on the back of the product. Next, install the corresponding program for the model, referring to the following instructions.

   For model CA650X, click the [ ] icon to install the corresponding program.

   - This applies if you want to connect the product to the PC wirelessly using a wireless-connection dongle. (The product can also be connected to the PC through a wired connection using a USB 3.0 cable.)

     - Select the country where you will use the product when installing the driver initially. Using the product in a country other than the selected country would be contrary to the law.
     - If a software installation window does not appear in the main screen, install "Samsung HUB Monitor Setup" using the execution file ("CA650X_Wireless_HUB_Monitor.exe") on the CD-ROM.

   For model CA650U, click the [ ] icon to install the corresponding program.

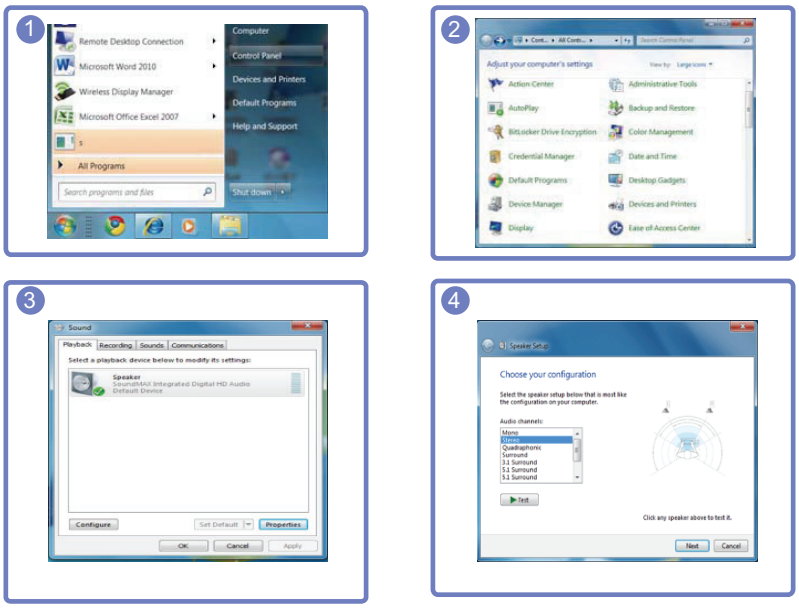
   - This applies if you want to connect the product to the PC through a wired connection using a USB 3.0 cable.

     - To connect the product to the PC using a wireless-connection dongle (sold separately), install the program for CA650X [ ]. The CA650U model does not come with a wireless-connection dongle. The dongle can be purchased at your nearest retailer.
     - If a software installation window does not appear in the main screen, install "Samsung HUB Monitor Setup" using the execution file ("CA650U_USB_HUB_Monitor.exe") on the CD-ROM.

5. Follow the instructions given on the screen to proceed with installation.

6 After installing "Samsung HUB Monitor Setup", customize the audio output port settings as required.

Control Panel → Sound → Speakers → Configure Speakers



"Samsung HUB Monitor Setup" software consists of "Samsung Wireless HUB Monitor" and "Samsung Wireless Monitor". To delete the software, go to Start → Settings → Control Panel and double-click Add or Remove Programs on the PC. Select "Samsung Wireless HUB Monitor" and "Samsung Wireless Monitor" from the list and click Change/Remove. (Applicable only when the [ ] program is installed using the execution file ("CA650X_Wireless_HUB_Monitor.exe").)

2.3 Connecting the Product to a PC to Use "HUB Monitor"

Connect the product to a PC via Wireless USB and the USB cable.

Connecting the product and PC via Wireless USB and the USB cable will allow you to hear audio when you plug headphones or speakers into [🎧] on the product. (Not available when the D-SUB or HDMI-DVI cable is connected.)

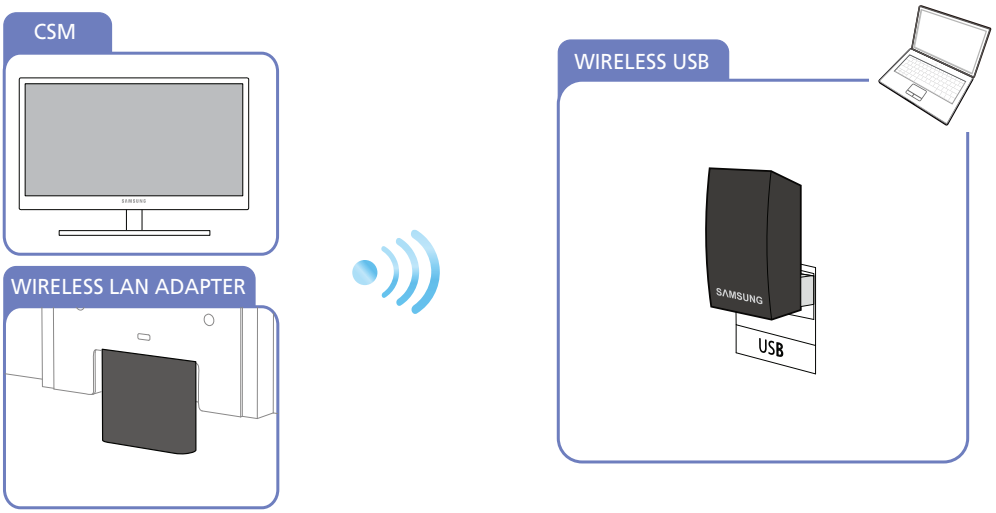
If a PC is connected, the product will automatically switch to the mode of the detected input source. If several source devices are connected to the product, the input source will automatically change according to this priority, from left to right: Wireless USB mode > USB mode > Analog mode > HDMI mode.

When the product connects to a PC for the first time, the optimum resolution (1920 x 1080) will be selected automatically and the display will be set to extended mode. For subsequent connections of the product to the PC, customized resolution settings will be applied.

When multiple display output ports on the PC are connected to the HUB Monitor, different signals may output depending on the system specifications of the PC.

2.3.1 Connecting to a PC via Wireless USB

- The CA650U model does not come with a wireless-connection dongle. The dongle can be purchased at your nearest retailer.
- The power LED will turn red if a wireless communication connection is established.

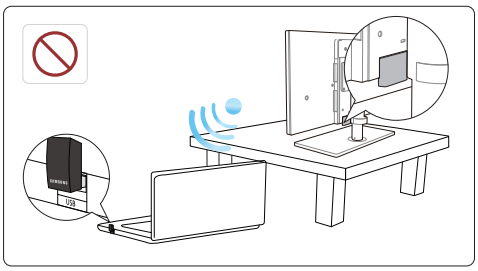


To use the Wireless USB function, connect the wireless-connection dongle (Rx) provided with the product to the [WIRELESS LAN ADAPTER] port on the product. Next, connect the wireless-connection dongle (Tx) to the USB port on the PC. The wireless-connection dongle allows a wireless connection

between the product and a PC. The dongle connected to a PC should point at the product to maximize signal reception.

Wireless communication can be affected by the surrounding environmental conditions. Do not place an object, or obstacle, between the monitor and PC. The object can affect the sensitivity of the signal transmission/reception.

- Ensure the receiver (dongle) on the HUB Monitor is at the same level and facing the transmitter (dongle) on the PC.



The table is a potential obstacle and can degrade wireless performance if the receiver (dongle) on the HUB Monitor is not placed at the same level as the transmitter (dongle) on the PC. This issue may occur even if the dongles face each other.

- The sensitivity of the signal reception/transmission can affect the performance of video or game playback (choppy or slowed-down video).
- To maximize the transmission/reception, attach the transmitter (dongle) to the USB port (on either side of the notebook PC) that is closest to the receiver (dongle) on the HUB Monitor.
- To maximize the wireless communication performance, ensure your PC is within a range of 70cm from the receiver (dongle) on the HUB Monitor. Ensure the PC and monitor are placed on the same table or at the same height. Otherwise, the signal transmission/reception can be degraded.
- Using the HUB Monitor on a steel table will degrade wireless performance.
- Do not place any object that can obstruct the signal transmission in front of the product. Such objects may decrease signal reception.
- This product cannot connect to multiple PCs wirelessly at the same time and vice versa.

Connecting to a PC via Wireless USB

1. Install "Samsung HUB Monitor Setup" on the PC, and attach the dongle to the USB port on the PC.
2. Press [▭/↵] to change the input source for the product to Wireless.

3 Double-click the "Wireless Display Manager" icon created on the desktop. The following screen will appear.

Five levels of signal intensity are available.

All the five signal intensity indicator bars, including the green bar, will be lit when the strongest signal is received. The weakest signal intensity will turn on the red bar only.

The following "Found New Hardware Wizard" screen may appear when the product attempts to connect to a PC via Wireless USB. Proceed with installation following the instructions displayed.

4 Double-click the HUB Monitor to open the following screen.

If a connection is established between the product and PC, [✓] will appear over the signal intensity bars as shown below and the product will display the PC screen. If [✓] does not appear, the connection is not established between the product and PC.

5 Right-click on Connected Monitor to display the context menu as shown below.

- Disconnect: Disconnect Wireless between the product and PC.
- Set as default: Give first priority to the product to connect to the PC once a Wireless signal is detected. A star will appear beside the monitor icon if the product is set as the default monitor.

- Rename: Customize the name of the connected monitor.

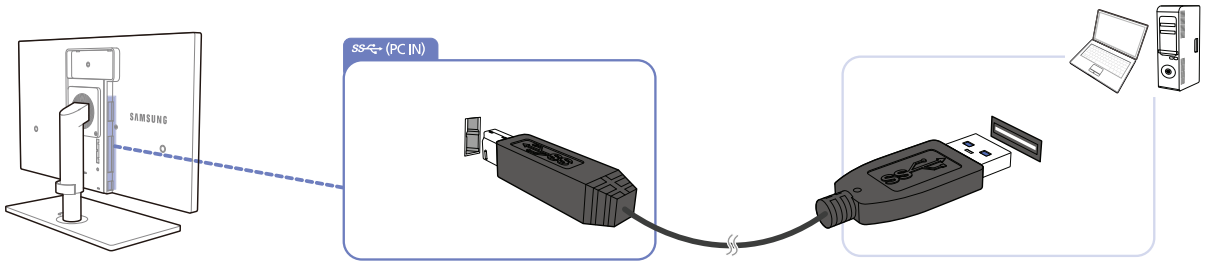
The program will automatically activate to allow you to use the Wireless USB connection even when the "Wireless Display" window is closed.

Automatic/manual Wireless USB connection

Set Auto Wireless Detection to On under HUB in the on-screen display menu. A Wireless USB connection will automatically be established if the product is within 70cm from the PC. The first priority will be given to a Wireless USB connection even when the product is in power-saving mode or is connected to another input source (Analog/HDMI/USB). The Connecting to PC… message will be displayed while connection is attempted.

To establish a Wireless USB connection when Auto Wireless Detection is set to Off, press [▭/↵] to switch to Wireless USB mode. The Connecting to PC… message will be displayed while connection is attempted. Deactivating the Wireless USB mode will automatically restore the previous mode.

2.3.2 Connecting to a PC via the USB Cable



Connect the USB cable to [ ] on the back of the product and USB [ ] on the PC.

A USB 2.0 cable can be used to connect the product to a PC. However, the PC should support USB 3.0 for the USB 3.0 function to work fully.

Connecting to a PC using the USB cable

1. Connect a desktop PC to the product using the USB cable.
2. Press [▭/↵] to change the input source for the product to USB mode.
3. The product will display the PC screen if the connection is established.

Automatic/manual USB cable connection

The input source will automatically change to USB mode if a USB cable connects to the product and a PC. The USB mode will be given top priority even when the product is in power-saving mode or is connected to another source (Analog/HDMI). If the input source does not switch to USB mode automatically, press [▭/↵] to switch to USB mode.

- Top priority will be given to Wireless USB mode if the product is connected to Wireless USB and a USB cable at the same time.
- Disconnecting the USB cable will automatically restore the previous mode.

2.4 Utilizing "HUB Monitor"

HUB Monitor is only available when the product is connected to a PC via Wireless USB or a USB cable.

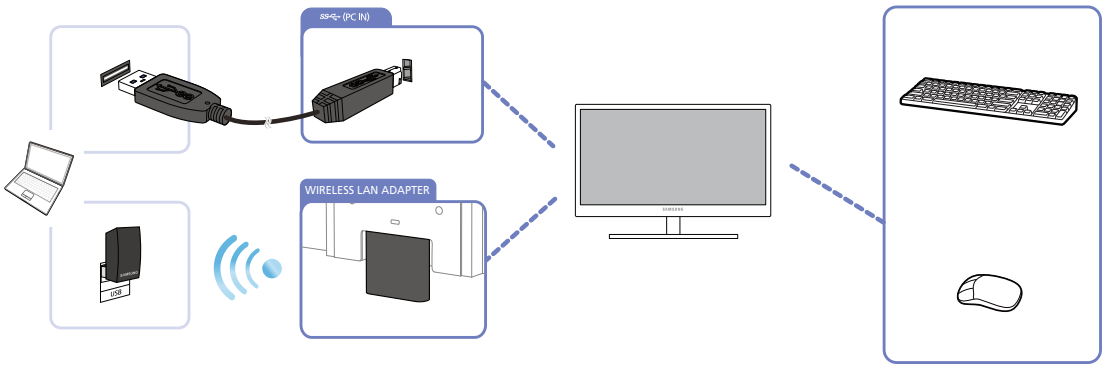
2.4.1 Using the Product as a USB HUB

Using the product as a hub, connect and use various source devices with the product at the same time.

A PC cannot connect to multiple source devices at the same time as it has a limited number of input/output ports available. The HUB feature on the product will improve your work efficiency by allowing you to connect multiple source devices to the USB ports on the product at the same time without connecting them to a PC.

- The product is compatible with a USB 2.0 cable. However, your PC should support USB 3.0 for the HUB function to work fully.
- If you experience a communication problem with a PC that provides the USB 3.0 function, download and install the latest driver version from the PC manufacturer.

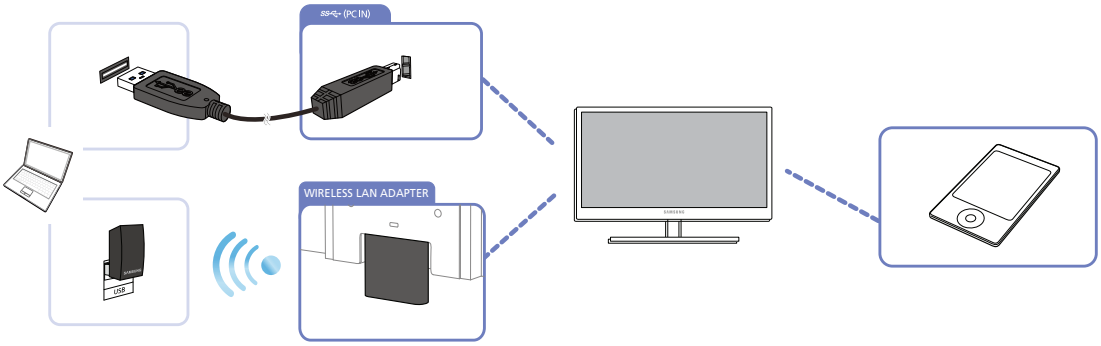
Using the Product as a USB HUB



If multiple source devices are connected to the PC, the many cables around the PC may look messy. Connecting the devices directly to the product will resolve such inconvenience.

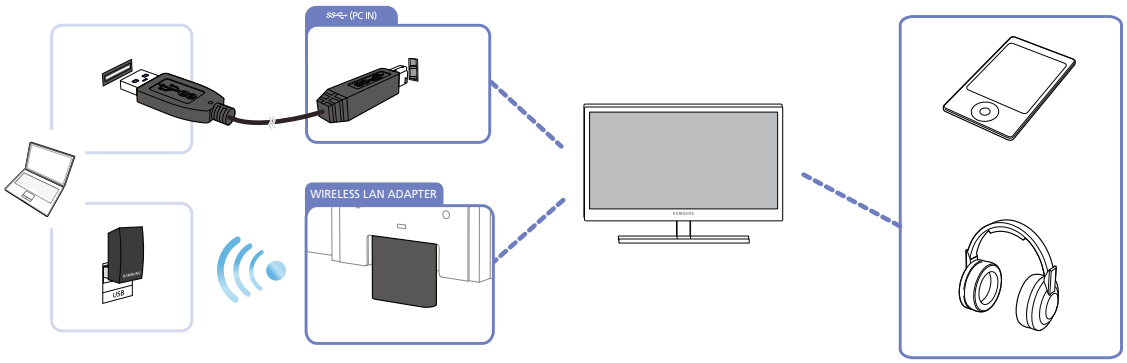
- To detect and start a source device faster, connect the device to the blue USB 3.0 port on the back of the product.
- An external mass-storage HDD requires external power supply. Be sure to connect it to a power source.

Using "HUB Monitor"



Connect a mobile IT device such as an MP3 player or smart phone to the product when connected to a PC. This allows you to use the device from the PC or charge the battery on the device.

- To charge the battery of a device, be sure to connect the device to the blue USB 3.0 port on the back of the product.
- Battery charging is available in power-saving mode, but not available when the product is powered off.
- Note that the battery will not be charged if the power cable is disconnected from the power socket.



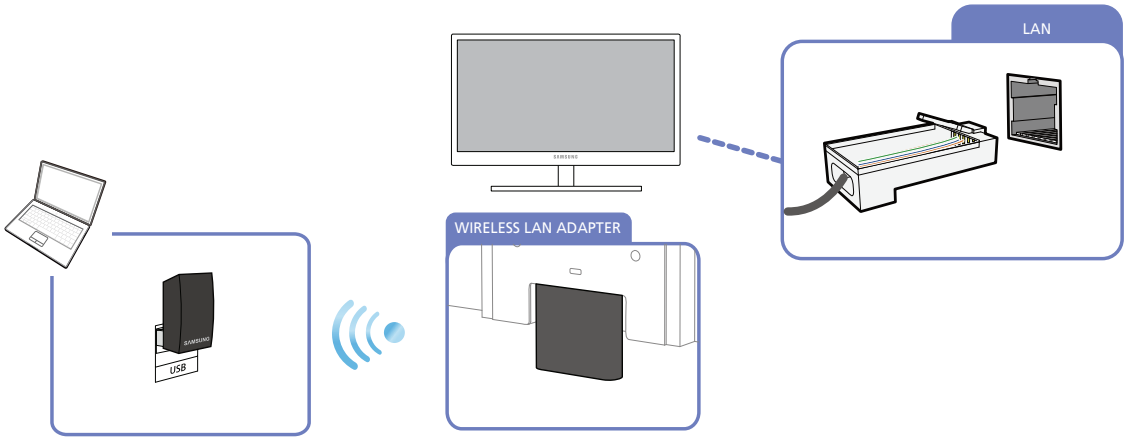
Connect multiple source devices to the product and use the device you want by changing the input source.

2.4.2 Connecting to a LAN

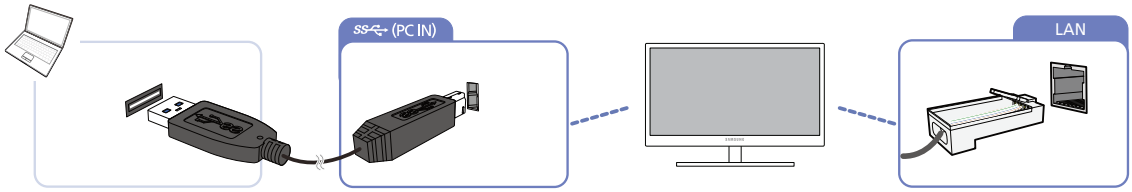
"HUB Monitor" allows you to use the Internet from a PC when you connect a LAN cable to the product (if the product is connected to the PC), without having to connect the LAN cable directly to the PC.

This is achieved by an internal chip that transmits data received via the LAN cable to the PC as a converted USB signal.

Connecting to a LAN via Wireless USB



Connecting to a LAN via USB cable



This product cannot connect to multiple source PCs at the same time and vice versa.

2.5 Configuring the HUB Monitor IP

1 After installing the integrated driver for HUB Monitor, go to Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings.

2 You can see that the following two devices are displayed.

a. The user PC's network device

b. The HUB Monitor's network device (USB to Ethernet adapter)

The two devices above refer to your PC's LAN network device and your HUB Monitor's network device.

To use the Internet using the HUB Monitor's LAN network, configure the network settings as follows according to the type of IP you will be using.

2.5.1 Dynamic IP

The dynamic IP address mode automatically configures the network settings on the PC using data sent by a server, which allots an IP address. This is possible, owing to the "DHCP (Dynamic Host Configuration Protocol)" service. The service consists of three steps: an IP address allotment request is sent to the DHCP server when the PC boots up, the DHCP server that received the request transmits network information such as the IP address to the PC, and the transmitted network information is automatically registered to the network settings on the PC. The DHCP service is convenient and useful especially in an environment where multiple PCs are used. Theoretically, the IP address changes each time the PC boots up (or an IP allotment request is sent); in many cases, however, the existing IP address is re-allotted. An Internet router performs two roles: creating a private IP address (NAT service) and automatically allotting the IP address to each PC (DHCP service) at the same time.

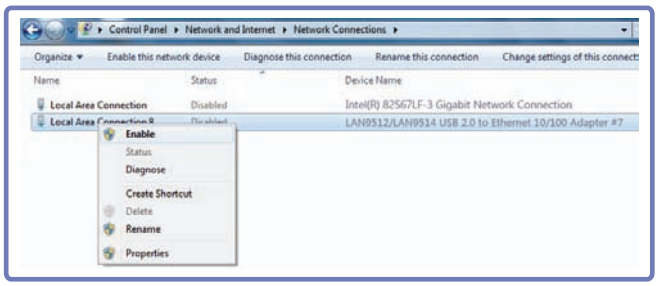
When using your HUB Monitor's or notebook PC's LAN network, ensure you insert a LAN cable into only one device. Otherwise, a system crash may occur.

Dynamic IP User

1 To use a dynamic IP address, connect a LAN to your HUB Monitor.

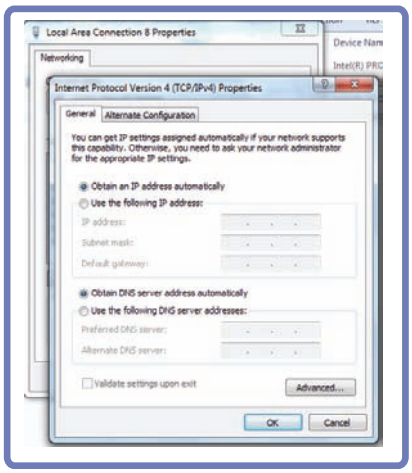
2 Next, go to the network settings menu and activate the HUB Monitor's network device (select "Use").

Go to Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings. Next, right-click on the HUB Monitor's network device (marked “LAN9512/ LAN9514 USB 2.0 to Ethernet 10/100 Adapter #7”) and select Use.



3 Using the network properties menu, check that the IP address mode for the HUB Monitor's network device is set to Auto.

Go to Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings. Next, right-click on the HUB Monitor's network device (marked “LAN9512/ LAN9514 USB 2.0 to Ethernet 10/100 Adapter #7”).


Local Area Connection 8 Properties
Networking
Internet Protocol Version 4 (TCP/IPv4) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

Select Properties → Internet Protocol Version 4 (TCP/IPv4) → Properties.

2.5.2 Static IP

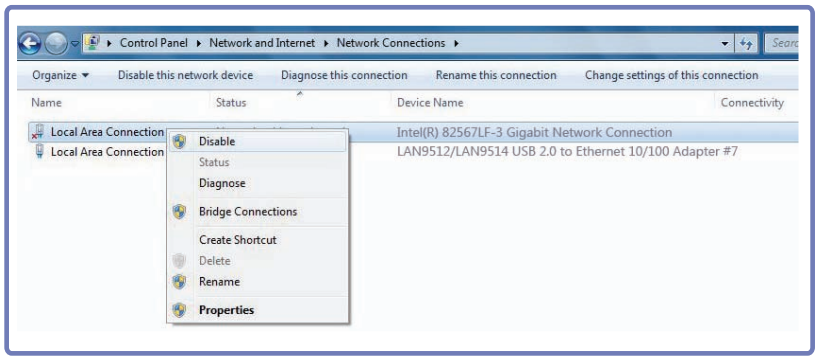
To configure the IP address (private or official) on your PC, someone (mostly a server system) must distribute and allot an IP address to the PC. An official IP address is allotted by your Internet service provider, and a private IP address is allotted by your Internet router. You can select whether to configure the IP address on the PC automatically or manually. The static IP address mode is used to manually enter an IP address. The static IP address mode is suitable if the IP address for the PC should not be changed (such as for a file sharing server) and generally is not used, except under such special circumstances.

When using your HUB Monitor's or notebook PC’s LAN network, ensure you insert a LAN cable into only one device. Otherwise, a system crash may occur.

Static IP User

1 Set the LAN network for the notebook PC to Do not use.

2 Go to Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings. Next, right-click on the notebook PC's network device and select Do not use.

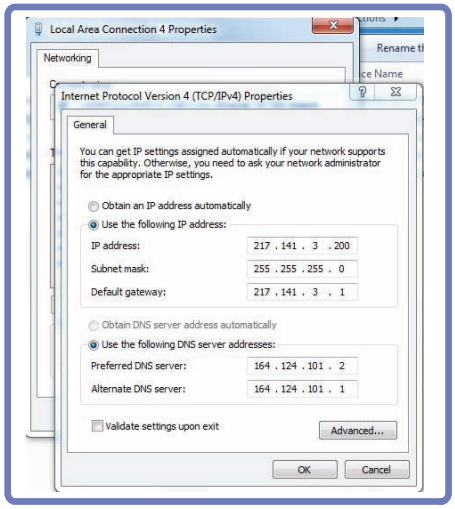


3 Right-click on the HUB Monitor's network device (marked "LAN9512/LAN9514 USB 2.0 to Ethernet 10/100 Adapter #7"), and select Use.

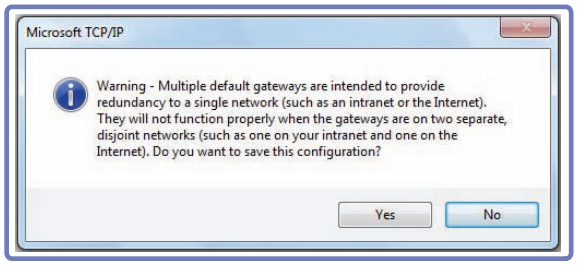
Be sure to perform this process before configuring the IP.

4 Configure the static IP. Assign the static IP that is allotted to the HUB Monitor's network device.

Go to Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings. Next, right-click on the HUB Monitor's network device (marked "LAN9512/LAN9514 USB 2.0 to Ethernet 10/100 Adapter #7"), select Properties → Internet Protocol Version 4 (TCP/IPv4) → Properties, and configure the static IP and DNS settings.


Local Area Connection 4 Properties
Networking
Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 217 . 141 . 3 . 200
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 217 . 141 . 3 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 164 . 124 . 101 . 2
Alternate DNS server: 164 . 124 . 101 . 1
Validate settings upon exit
Advanced...
OK
Cancel

5 After configuring the IP, click OK. The following message will appear.

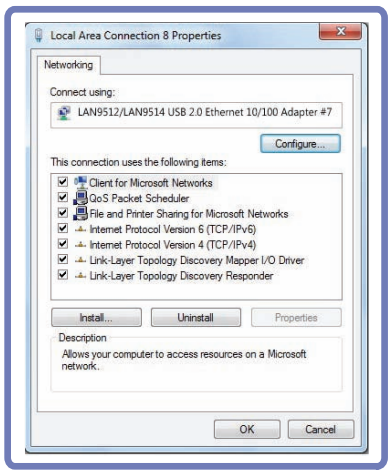

Microsoft TCP/IP
Warning - Multiple default gateways are intended to provide redundancy to a single network (such as an intranet or the Internet). They will not function properly when the gateways are on two separate, disjoint networks (such as one on your intranet and one on the Internet). Do you want to save this configuration?
Yes
No

A static IP must be allotted to only one network device. The following message will appear if the same static IP is allotted to the network devices of both the notebook PC and HUB Monitor. (Ensure the network device that is not in use is set to Do not use.)

Select No in the message window.

To use the notebook PC's LAN network, set the HUB Monitor's network to Do not use and the notebook PC's network device to Use. Next, configure the IP settings.

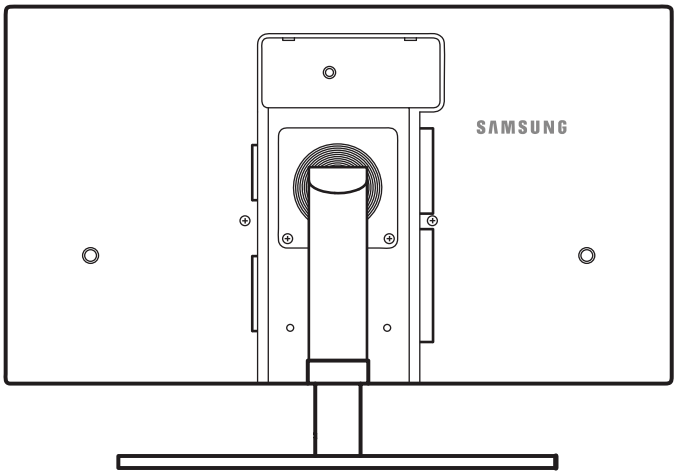
6 Click Close.



2.6 Notice before your use of Wireless USB or USB Mode

1. Most games require a high resolution and fast response time. When you play a game, it is recommended that you use Analog or HDMI mode instead of Wireless USB or USB mode. Note that playing a game or movie is not supported in Wireless USB or USB mode on a Windows XP or VISTA operating system.
2. Recognizing the Wireless USB or USB mode may take awhile if the mode is used for the first time or the standby mode is deactivated on the PC.
3. To use the USB HUB function when the monitor is in USB mode (when the monitor is connected to the USB 2.0 port on the PC) or in Wireless USB mode, it is best to connect a USB cable to the black USB 2.0 port on the monitor.
4. If the PC enters Standby mode when the monitor is in Wireless USB mode, the wireless connection will be disconnected and the USB HUB function will be disabled.

3.1 Before Connecting



3.1.1 Pre-connection Checkpoints

- Before connecting a source device, read the user manual provided with it.
  The number and locations of ports on source devices may differ from device to device.
- Do not connect the power cable until all connections are completed.
  Connecting the power cable during connection may damage the product.
- Check the types of ports at the back of the product you want to connect.

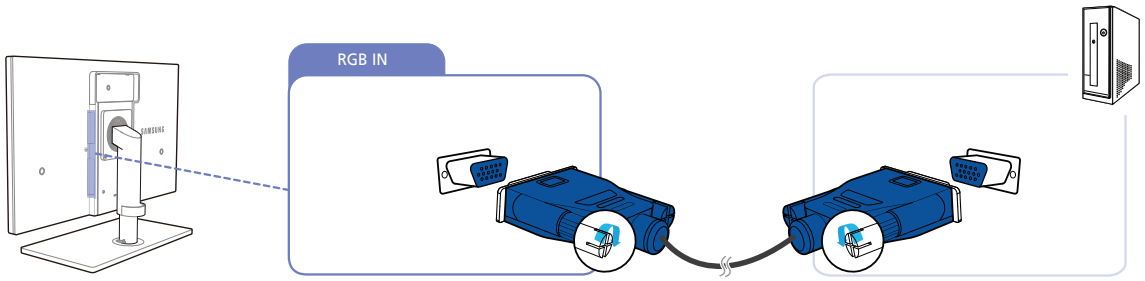
3.2 Connecting and Using a PC

3.2.1 Connecting to a PC

- Select a connection method suitable for your PC.

Connecting parts may differ in different products.

Connection using the D-SUB cable (analogue type)

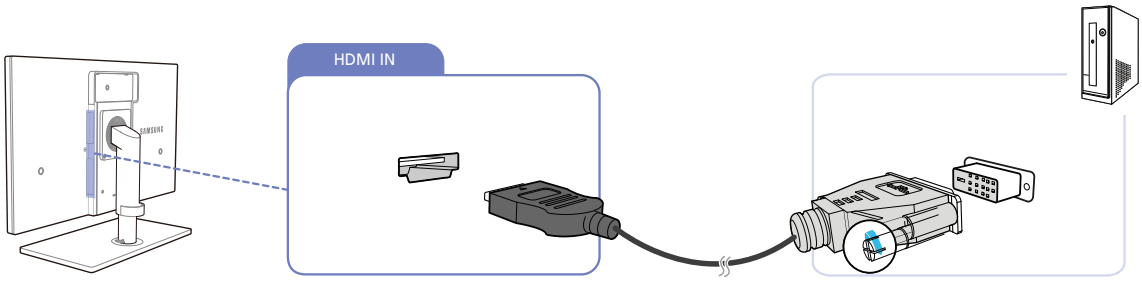


1. Connect the D-SUB cable to the [RGB IN] port on the back of the product and the RGB port on the PC.
2. Connect the DC power adapter to the product and a power socket, and turn on the power switch on the PC.

   (For details, refer to "3.4 Connecting the Power".)
3. Press [▭/↵] to change the input source to Analog.

Audio is not available if the PC and product are connected via the D-SUB port.

Connection Using an HDMI-DVI Cable

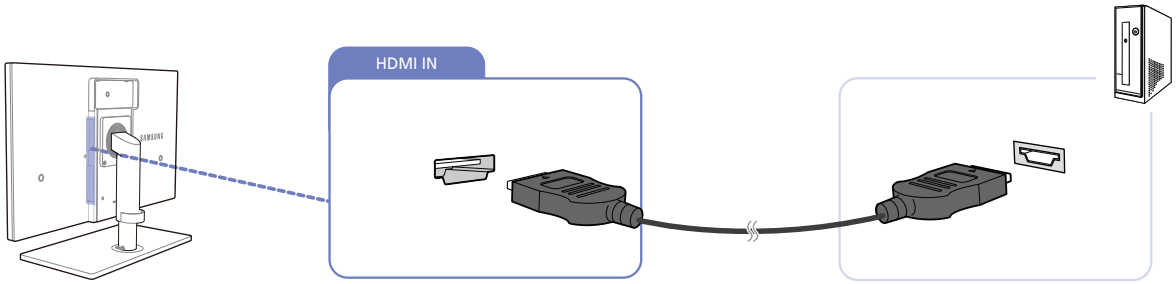


1. Connect the HDMI-DVI cable to the [HDMI IN] port on the back of the product and the DVI port on the PC.
2. Connect the DC power adapter to the product and a power socket, and turn on the power switch on the PC.

   (For details, refer to "3.4 Connecting the Power".)
3. Press [▭/↵] to change the input source to HDMI.

Audio is not available if the PC and product are connected via the HDMI-DVI port.

Connection Using an HDMI Cable (Digital Type)



1. Connect the HDMI cable to the [HDMI IN] port on the back of the product and the HDMI port on the PC.
2. Connect the DC power adapter to the product and a power socket, and turn on the power switch on the PC.

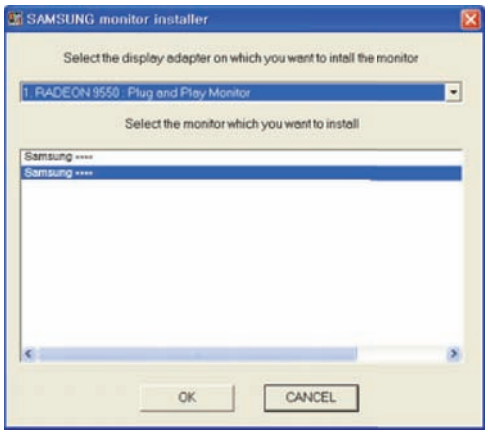
   (For details, refer to "3.4 Connecting the Power".)
3. Press [▭/↵] to change the input source to HDMI.

If audio is supported, the Volume (VOL) can be adjusted using the [▲/▼] buttons on the front of the product.

3.2.2 Driver Installation

- You can set the optimum resolution and frequency for this product by installing the corresponding drivers for this product.
- An installation driver is contained on the CD supplied with the product.
- If the file provided is faulty, visit the Samsung homepage (http://www.samsung.com) and download the file.

1. Insert the user manual CD provided with the product into the CD-ROM drive.
2. Click "Windows Driver".
3. Follow the instructions given on the screen to proceed with installation.
4. Select your product model from the list of models.


SAMSUNG monitor installer
Select the display adapter on which you want to intall the monitor
1. RADEON 9550 : Plug and Play Monitor
Select the monitor which you want to install
Samsung ****
Samsung ****
OK
CANCEL

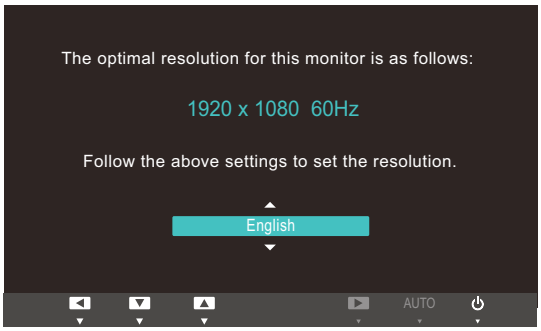
5. Go to Display Properties and check that the resolution and refresh rate are appropriate.

   Refer to your Windows OS manual for further details.

3.2.3 Setting Optimum Resolution

An information message about setting optimum resolution will appear if you power on the product for the first time after purchase.

Select a language and change the resolution to the optimum value.


The optimal resolution for this monitor is as follows:
1920 x 1080 60Hz
Follow the above settings to set the resolution.
English
AUTO

1 Press [▲/▼] to move to the language you want and press the [⏎/⏎].

2 To hide the information message, press [MENU].

- If the optimum resolution is not selected, the message will appear up to three times for a specified time even when the product is turned off and on again.
- The optimum resolution (1920 x 1080) can also be selected in Control Panel on your PC.

3.2.4 Changing the Resolution Using a PC

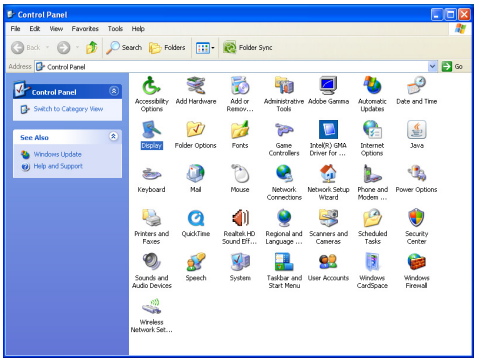
- Adjust the resolution and refresh rate in Control Panel on your PC to obtain optimum picture quality.
- The picture quality of TFT-LCDs may degrade if the optimum resolution is not selected.

Changing the Resolution on Windows XP

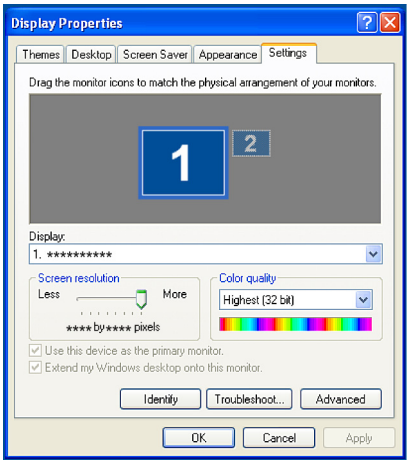
Go to Control Panel → Display → Settings and change the resolution.

1

2



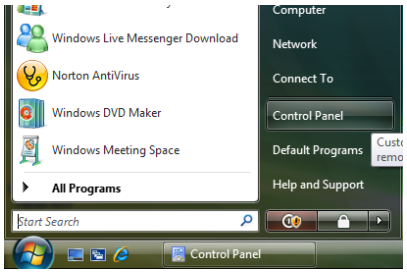
3



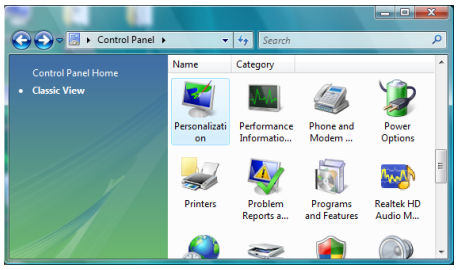
Changing the Resolution on Windows Vista

Go to Control Panel → Personalization → Display Settings and change the resolution.

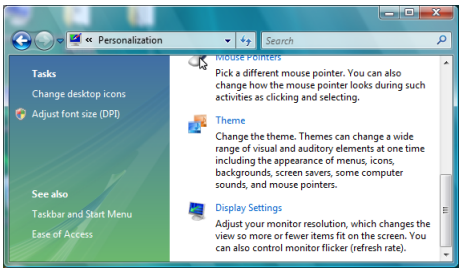
1



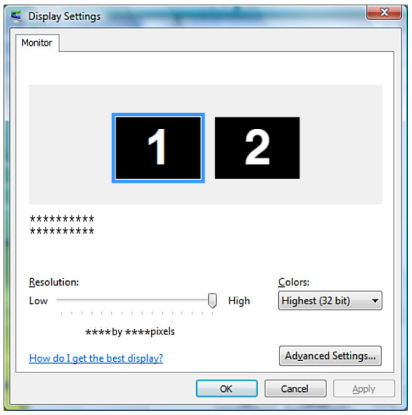
2



3


Personalization
Search
Tasks
Change desktop icons
Adjust font size (DPI)
See also
Taskbar and Start Menu
Ease of Access
Mouse Pointers
Pick a different mouse pointer. You can also change how the mouse pointer looks during such activities as clicking and selecting.
Theme
Change the theme. Themes can change a wide range of visual and auditory elements at one time including the appearance of menus, icons, backgrounds, screen savers, some computer sounds, and mouse pointers.
Display Settings
Adjust your monitor resolution, which changes the view so more or fewer items fit on the screen. You can also control monitor flicker (refresh rate).

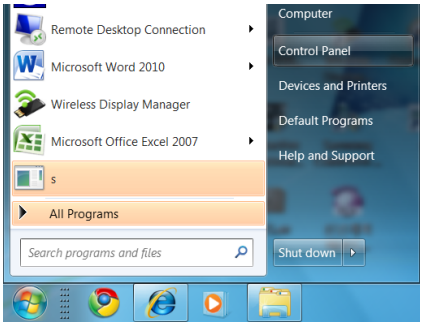
4



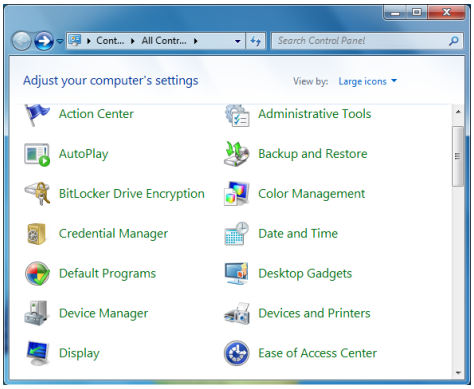
Changing the Resolution on Windows 7

Go to Control Panel → Display → Screen Resolution and change the resolution.

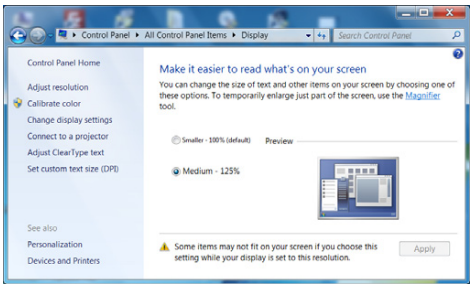
1



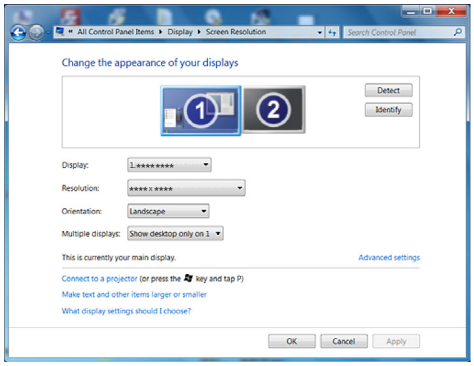
2



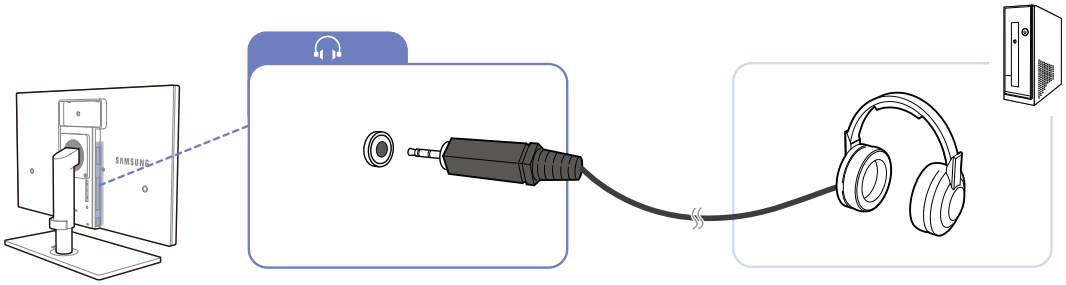
3



4



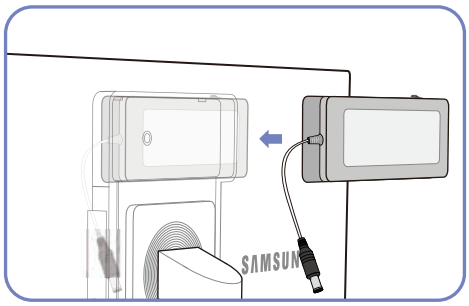
3.3 Connecting Headphones



- Connect an audio output device such as headphones or speakers to [ ] on the product.

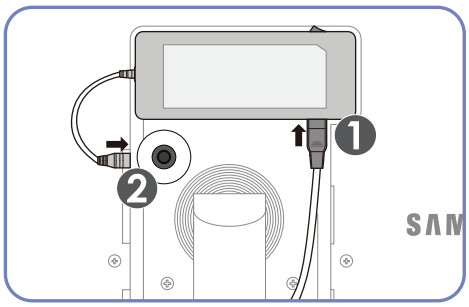
Headphones will function properly if the product is connected to a PC via USB, Wireless USB or HDMI.

3.4 Connecting the Power

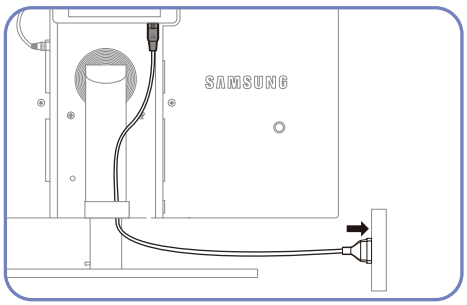


Put the DC power adapter in the groove, with the switch facing upward.

- Push the adapter until you hear a “click.”

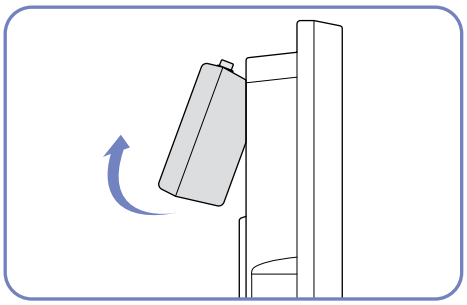


Connect the power cable to the DC power adapter. Next, connect the DC power adapter to the product.



Plug in the power cable to the power socket.

- Removing the DC power adapter



To remove the DC power adapter, lift it outwards from the bottom as shown in the image.

When using the adapter without fixing it to the back of the monitor, the adapter jack can easily get disconnected or the cable may break. Be sure to securely fix the adapter in the groove.

4 Screen Setup

Configure the screen settings such as brightness and color tone.

4.1 MAGIC

This feature provides the viewing angle, brightness, and tint to suit your preferences.

4.1.1 SAMSUNG MAGIC Bright

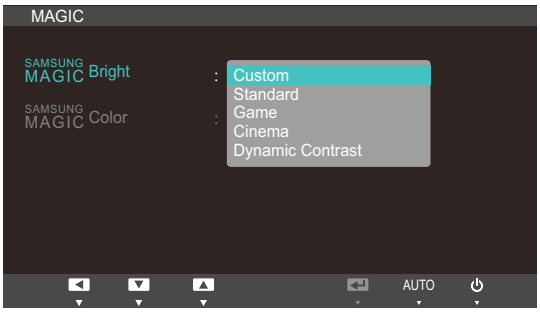
This menu provides an optimum picture quality suitable for the environment where the product will be used.

- Sub-options under SAMSUNG MAGICBright may vary depending on the settings of "PC/AV Mode." (See "Chapter 7. SETUP&RESET.")
- This menu is not available when Eco Light Sensor or Eco Saving is set to On.

Configuring SAMSUNG MAGICBright

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎] on the product.
3. Press [▲/▼] to move to MAGIC and press [⏎] on the product.
4. Press [▲/▼] to move to SAMSUNG MAGICBright and press [⏎] on the product. The following screen will appear.

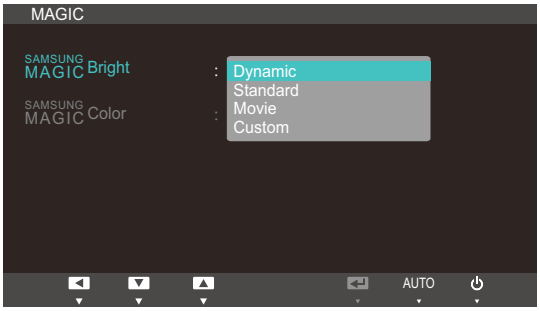
   [In PC mode]



- Custom: Customize the contrast and brightness as required.
- Standard: Obtain a picture quality suitable for editing documents or using Internet.
- Game: Obtain a picture quality suitable for playing games that involve many graphic effects and dynamic movements.
- Cinema: Obtain the brightness and sharpness of TVs suitable for enjoying video and DVD content.

- Dynamic Contrast: Obtain balanced brightness through automatic contrast adjustment.

[In AV mode]



- Dynamic: This mode is suitable when the ambient light is bright.
- Standard: This mode is generally suitable for any environment.
- Movie: This mode reduces eye fatigue.
- Custom: Customize the contrast and brightness as required.

5 Press [▲/▼] to move to the option you want and press the [▭/⏎].

6 The selected option will be applied.

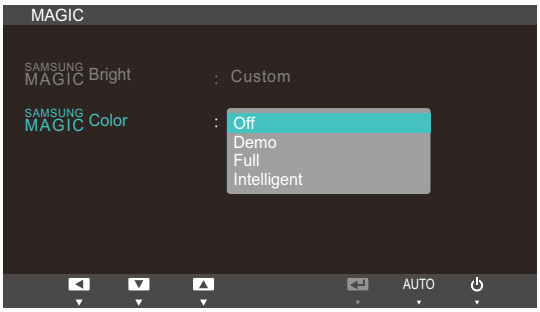
4.1.2 SAMSUNG MAGIC Color

SAMSUNG MAGICColor is a new picture-quality improvement technology developed independently by Samsung, which delivers vivid natural colors without picture quality degradation.

This menu is not available when SAMSUNG MAGICBright is in Cinema or Dynamic Contrast mode.

Configuring SAMSUNG MAGICColor

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎] on the product.
3. Press [▲/▼] to move to MAGIC and press [⏎] on the product.
4. Press [▲/▼] to move to SAMSUNG MAGICColor and press [⏎] on the product. The following screen will appear.



- Off: Disable SAMSUNG MAGICColor.
- Demo: Compare normal screen mode with SAMSUNG MAGICColor mode.
- Full: Obtain a vivid picture quality for all areas including the flesh colors in the picture.
- Intelligent: Improve the chroma for all areas except the flesh colors in the picture.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

4.2 Brightness

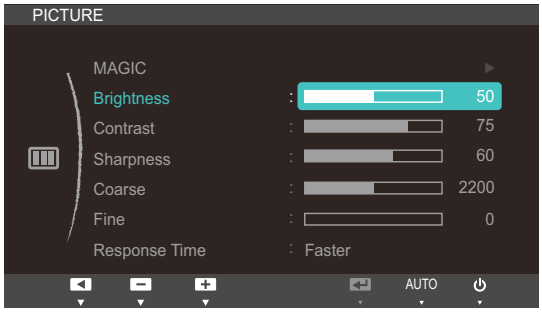
Adjust the general brightness of the picture. (Range: 0~100)

A higher value will make the picture appear brighter.

- This menu is not available when SAMSUNG MAGICBright is set to Dynamic Contrast mode.
- This menu is not available when Eco Light Sensor or Eco Saving is set to On.

4.2.1 Configuring Brightness

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎/↵] on the product.
3. Press [▲/▼] to move to Brightness and press [⏎/↵] on the product. The following screen will appear.



4. Adjust the Brightness using the [▲/▼] button.

4.3 Contrast

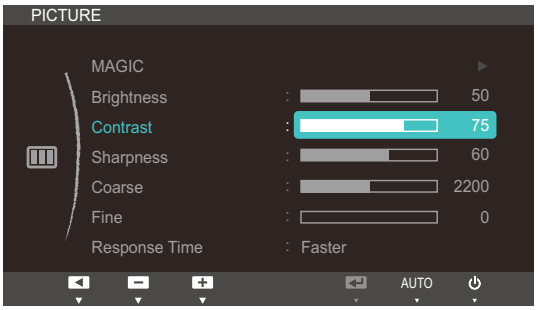
Adjust the contrast between the objects and background. (Range: 0~100)

A higher value will increase the contrast to make the object appear clearer.

- This menu is not available when SAMSUNG MAGICBright is in Cinema or Dynamic Contrast mode.
- This menu is not available when SAMSUNG MAGICColor is in Full or Intelligent mode.

4.3.1 Configuring Contrast

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎] on the product.
3. Press [▲/▼] to move to Contrast and press [⏎] on the product. The following screen will appear.



4. Adjust the Contrast using the [▲/▼] button.

4.4 Sharpness

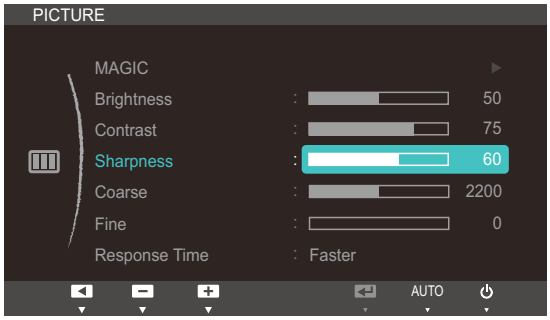
Make the outline of objects more clear or blurry. (Range: 0~100)

A higher value will make the outline of objects clearer.

- This menu is not available when SAMSUNG MAGICBright is in Cinema or Dynamic Contrast mode.
- This menu is not available when SAMSUNG MAGICColor is in Full or Intelligent mode.

4.4.1 Configuring Sharpness

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎] on the product.
3. Press [▲/▼] to move to Sharpness and press [⏎] on the product. The following screen will appear.



4. Adjust the Sharpness using the [▲/▼] button.

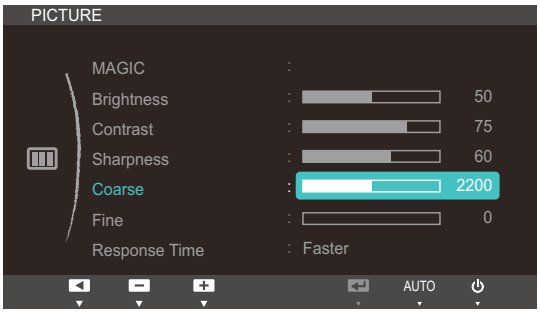
4.5 Coarse

Adjust the screen frequency.

Only available in Analog mode.

4.5.1 Adjusting Coarse

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎] on the product.
3. Press [▲/▼] to move to Coarse and press [⏎] on the product. The following screen will appear.



4. Adjust the Coarse using the [▲/▼] button.

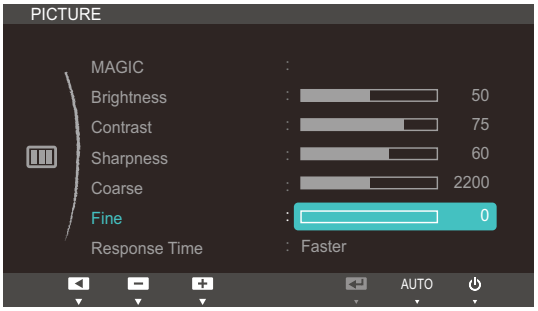
4.6 Fine

Fine-adjust the screen to obtain a vivid picture.

Only available in Analog mode.

4.6.1 Adjusting Fine

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎/↵] on the product.
3. Press [▲/▼] to move to Fine and press [⏎/↵] on the product. The following screen will appear.



4. Adjust the Fine using the [▲/▼] button.

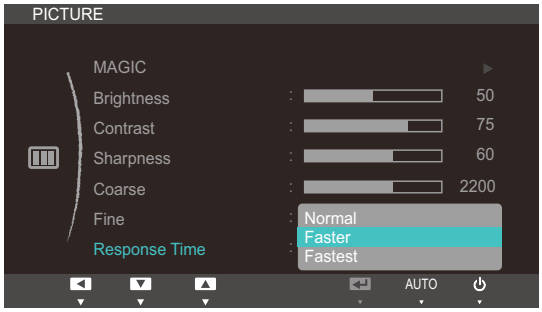
4.7 Response Time

Accelerate the panel response rate to make video appear more vivid and natural.

- It is best to set Response Time to Normal or Faster when you are not viewing a movie.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.7.1 Configuring Response Time

1. Press [MENU] on the product.
2. Press [▲/▼] to move to PICTURE and press [⏎] on the product.
3. Press [▲/▼] to move to Response Time and press [⏎] on the product. The following screen will appear.



4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

5 Configuring Tint

Adjust the tint of the screen. This menu is not available when SAMSUNG MAGICBright is set to Cinema or Dynamic Contrast mode.

5.1 Red

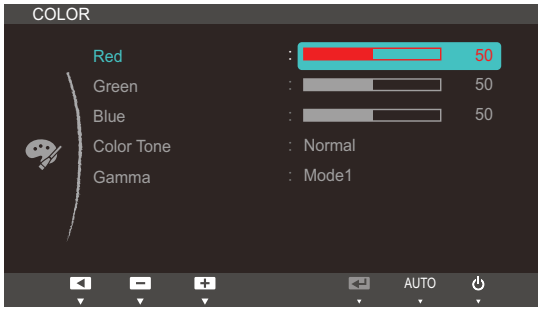
Adjust the value of the color red in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

This menu is not available when SAMSUNG MAGICColor is in Full or Intelligent mode.

5.1.1 Configuring Red

1. Press [MENU] on the product.
2. Press [▲/▼] to move to COLOR and press [▭/↵] on the product.
3. Press [▲/▼] to move to Red and press [▭/↵] on the product. The following screen will appear.



4. Adjust the Red using the [▲/▼] button.

5.2 Green

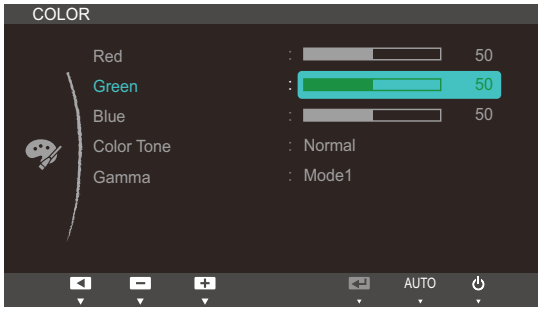
Adjust the value of the color green in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

This menu is not available when SAMSUNG MAGIC Color is in Full or Intelligent mode.

5.2.1 Configuring Green

1. Press [MENU] on the product.
2. Press [▲/▼] to move to COLOR and press [⏎] on the product.
3. Press [▲/▼] to move to Green and press [⏎] on the product. The following screen will appear.



4. Adjust the Green using the [▲/▼] button.

5.3 Blue

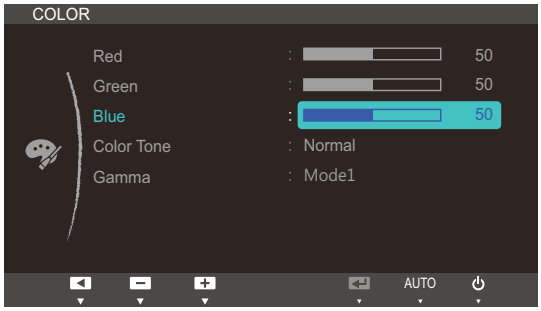
Adjust the value of the color blue in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

This menu is not available when SAMSUNG MAGIC Color is in Full or Intelligent mode.

5.3.1 Configuring Blue

1. Press [MENU] on the product.
2. Press [▲/▼] to move to COLOR and press [⏎] on the product.
3. Press [▲/▼] to move to Blue and press [⏎] on the product. The following screen will appear.



4. Adjust the Blue using the [▲/▼] button.

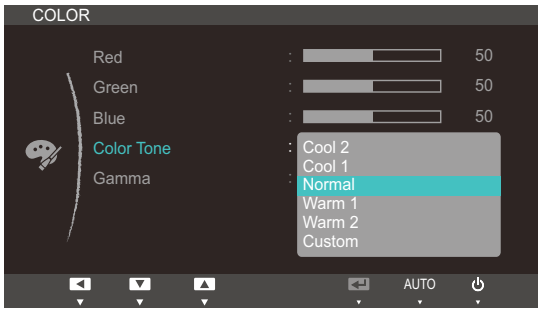
5.4 Color Tone

Adjust the general color tone of the picture.

This menu is not available when SAMSUNG MAGIC Color is in Full or Intelligent mode.

5.4.1 Configuring the Color Tone Settings

1. Press [MENU] on the product.
2. Press [▲/▼] to move to COLOR and press [▭/↵] on the product.
3. Press [▲/▼] to move to Color Tone and press [▭/↵] on the product. The following screen will appear.



- Cool2: Set the color temperature to be cooler than Cool1.
- Cool1: Set the color temperature to be cooler than Normal mode.
- Normal: Display the standard color tone.
- Warm1: Set the color temperature to be warmer than Normal mode.
- Warm2: Set the color temperature to be warmer than Warm1.
- Custom: Customize the color tone.

4. Press [▲/▼] to move to the option you want and press the [▭/↵].
5. The selected option will be applied.

5.5 Gamma

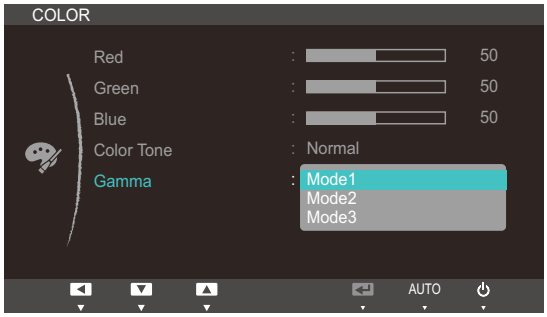
Adjust the mid-range brightness (Gamma) of the picture.

5.5.1 Configuring Gamma

1 Press [MENU] on the product.

2 Press [▲/▼] to move to COLOR and press [▭/↵] on the product.

3 Press [▲/▼] to move to Gamma and press [▭/↵] on the product. The following screen will appear.



4 Press [▲/▼] to move to the option you want and press the [▭/↵].

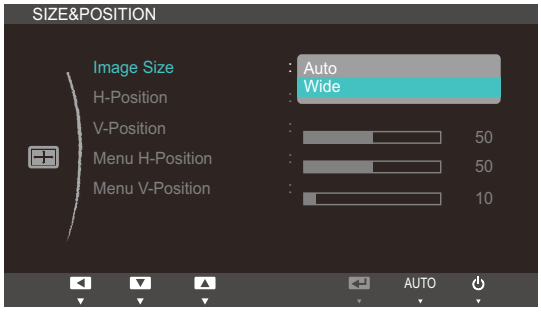
5 The selected option will be applied.

6.1 Image Size

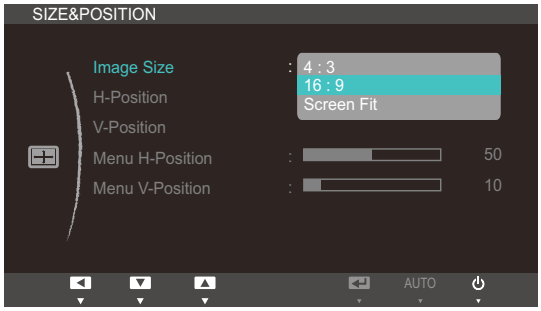
Change the picture size.

6.1.1 Changing the Picture Size

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SIZE&POSITION and press [⏎] on the product.
3. Press [▲/▼] to move to Image Size and press [⏎] on the product. The following screen will appear.



- Auto: Display the picture according to the aspect ratio of the input source.
- Wide: Display the picture in full screen regardless of the aspect ratio of the input source.



- 4:3: Display the picture with an aspect ratio of 4:3. Suitable for videos and standard broadcasts.
- 16:9: Display the picture with an aspect ratio of 16:9. Suitable for DVD content or widescreen broadcasts.
- Screen Fit: Display the picture with the original aspect ratio without cutting off.

Requirements to activate Image Size

- When connecting to digital output device via DVI/HDMI cable
- When signal resolution is 480p, 576p , 720p, 1080i, 1080p

4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

6.2 H-Position & V-Position

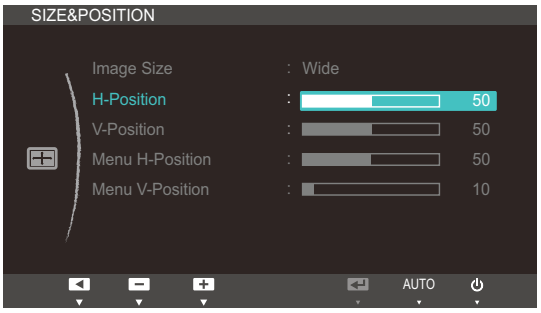
H-Position: Move the screen to the left or right.

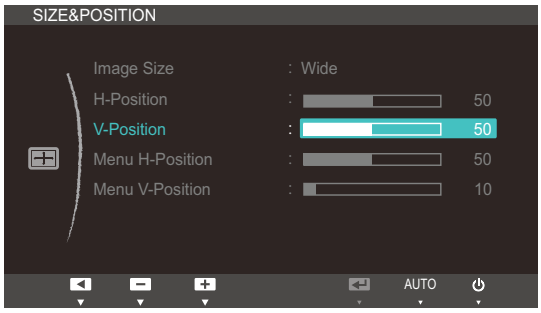
V-Position: Move the screen up or down.

- This menu is only available when Image Size is set to Screen Fit.
- Only available in Analog mode.

6.2.1 Configuring H-Position & V-Position

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SIZE&POSITION and press [⏍/⏎] on the product.
3. Press [▲/▼] to move to H-Position or V-Position, and press [⏍/⏎]. The following screen will appear.





4. Press [▲/▼] to configure H-Position or V-Position.

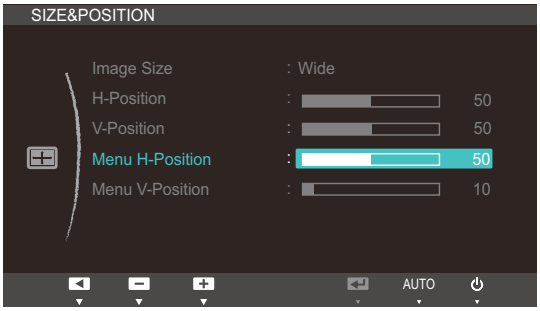
6.3 Menu H-Position & Menu V-Position

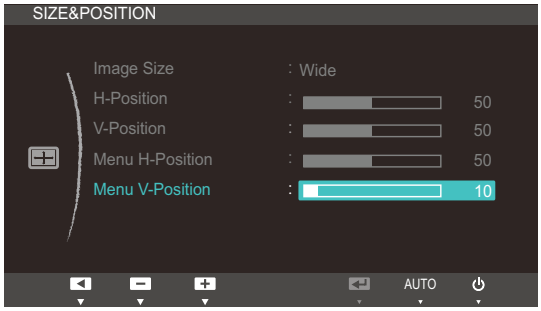
Menu H-Position: Move the menu position to the left or right.

Menu V-Position: Move the menu position up or down.

6.3.1 Configuring Menu H-Position & Menu V-Position

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SIZE&POSITION and press [▭/↵] on the product.
3. Press [▲/▼] to move to Menu H-Position or Menu V-Position, and press [▭/↵]. The following screen will appear.





4. Press [▲/▼] to configure Menu H-Position or Menu V-Position.

7.1 HUB

Configure the settings to use the HUB function on the product.

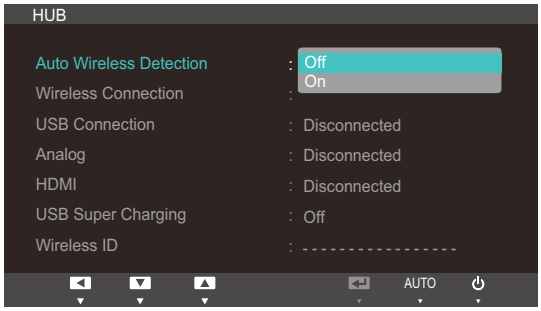
Refer to "Chapter 2. HUB Monitor" for details about how to use the HUB function.

7.1.1 Auto Wireless Detection

If the product is connected to a PC via Wireless USB, it will automatically detect the Wireless USB signal and change the input source to Wireless USB mode.

Configuring Auto Wireless Detection

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to HUB and press [⏎] on the product.
4. Press [▲/▼] to move to Auto Wireless Detection and press [⏎] on the product. The following screen will appear.



- Off: Deactivate Auto Wireless Detection
- On: Automatically detect a Wireless USB signal and change the input source to Wireless USB mode.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

7.1.2 Wireless Connection

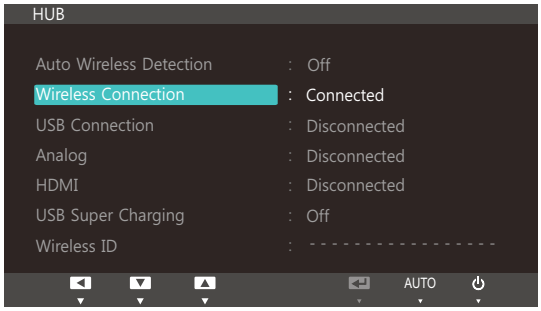
You can view the status of the Wireless USB connection between the product and a PC.

Selecting the Wireless Connection option. The input source will change to Wireless USB mode.

- The connection status will be shown even when the input source is not Wireless USB mode.
- Selecting Wireless Connection when a Wireless USB connection is established will automatically change the input source to Wireless USB mode.

Activating Wireless Connection

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to HUB and press [⏎] on the product. A message will appear indicating that a Wireless USB connection is established or disconnected.
4. If a Wireless USB connection is established, press [▲/▼] to move to Wireless Connection and press [⏎]. The input source will automatically switch to Wireless USB mode.



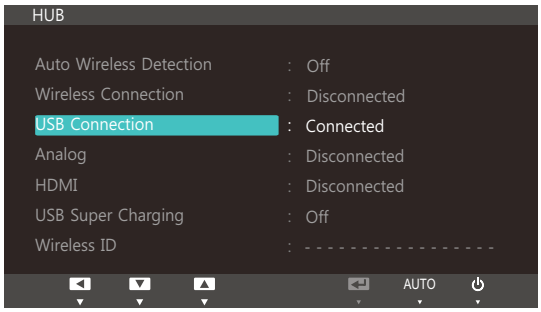
7.1.3 USB Connection

You can view the USB cable connection status between the product and a PC.

- The connection status will be shown even when the input source is not USB mode.
- Selecting USB Connection when a USB cable is connected will automatically change the input source to USB mode.

Configuring USB Connection

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to HUB and press [⏎] on the product. A message will appear indicating that a USB cable is connected or disconnected.
4. If a USB cable is connected, press [▲/▼] to move to USB Connection and press [⏎]. The input source will automatically switch to USB mode.


HUB
Auto Wireless Detection : Off
Wireless Connection : Disconnected
USB Connection : Connected
Analog : Disconnected
HDMI : Disconnected
USB Super Charging : Off
Wireless ID : - - - - - - - - - - - - - - - - -
AUTO

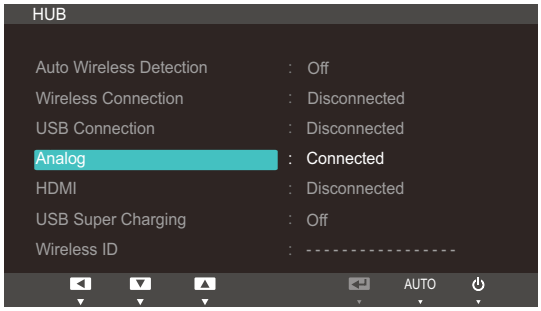
7.1.4 Analog

You can view the Analog cable connection status between the product and a PC.

- The connection status will be shown even when the input source is not Analog mode.
- Selecting the Analog option when an analog cable is connected will automatically change the input source to Analog mode.

Configuring Analog

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⬚/↵] on the product.
3. Press [▲/▼] to move to HUB and press [⬚/↵] on the product. A message will appear indicating that an analog cable is connected or disconnected.
4. If an analog cable is connected, press [▲/▼] to move to Analog and press [⬚/↵]. The input source will automatically switch to Analog mode.



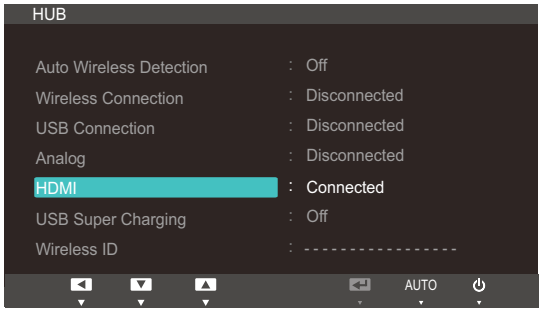
7.1.5 HDMI

You can view the HDMI connection status between the product and an AV device.

- The connection status will be shown even when the input source is not HDMI mode.
- Selecting the HDMI option when an HDMI cable is connected will automatically change the input source to HDMI mode.

Configuring HDMI

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to HUB and press [⏎] on the product. A message will appear indicating that an HDMI cable is connected or disconnected.
4. If an HDMI cable is connected, press [▲/▼] to move to HDMI and press [⏎]. The input source will automatically switch to HDMI mode.



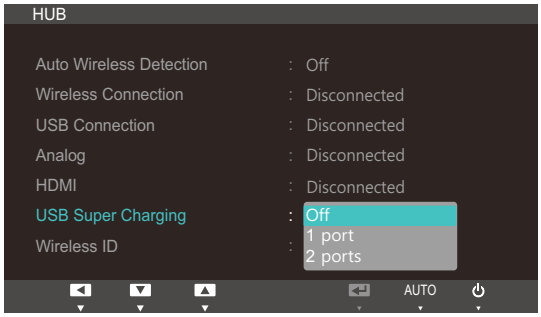
7.1.6 USB Super Charging

A source device's battery can be charged quickly via USB 3.0 port on the product.

- Data transmission is not available if USB Super Charging is on.
- To enable standard charging or data transmission, set USB Super Charging to off.
- The input source does not need to be changed.

Configuring USB Super Charging

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to HUB and press [⏎] on the product.
4. Press [▲/▼] to move to USB Super Charging and press [⏎] on the product. The following screen will appear.



- Off: Deactivate USB Super Charging
- 1 Port: Enable a single USB 3.0 port (marked with a charging icon) for quick battery charging.

  Only the USB 3.0 port marked [SS 1] supports high-speed battery charging
- 2 Ports: Enable two USB 3.0 ports for quick battery charging.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

7.1.7 Wireless ID

Wireless ID is a unique ID assigned to a monitor. The "Samsung HUB Monitor Setup" program reads the ID and identifies each of nearby monitors. The ID is shown in the "Samsung HUB Monitor Setup" program and in the lower part of the HUB menu.

7.2 ECO

The Eco Motion Sensor, Eco Light Sensor, and Eco Saving options are displayed on the same menu page so that you can conveniently configure the power saving settings.

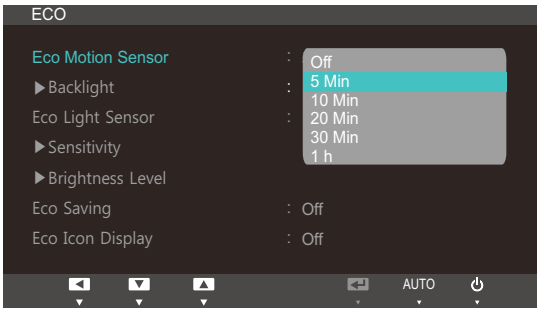
7.2.1 Eco Motion Sensor

The Eco Motion Sensor activates to save power when it does not detect any movement within a specified area for a specified period of time.

Eco Motion Sensor is not available when the monitor is used in portrait mode.

Configuring Eco Motion Sensor

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to ECO and press [⏎] on the product.
4. Press [▲/▼] to move to Eco Motion Sensor and press [⏎]. The following screen will appear.



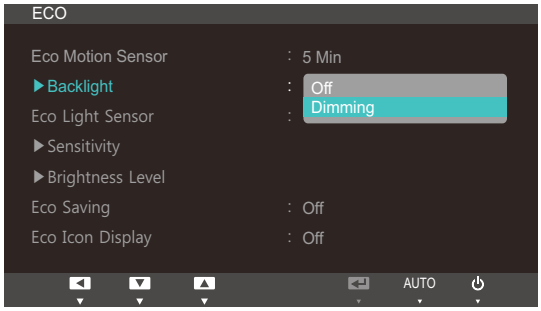
This option is disabled if the product is connected to a PC that is in power-saving mode.

- Off: Deactivate the Eco Motion Sensor function.
- 5 Min: Automatically turn off the power if the sensor has not detected any movement of an object or person for 5 minutes within the specified range of detection.
- 10 Min: Automatically turn off the power if the sensor has not detected any movement of an object or person for 10 minutes within the specified range of detection.
- 20 Min: Automatically turn off the power if the sensor has not detected any movement of an object or person for 20 minutes within the specified range of detection.
- 30 Min: Automatically turn off the power if the sensor has not detected any movement of an object or person for 30 minutes within the specified range of detection.
- 1 h : Automatically turn off the power if the sensor has not detected any movement of an object or person for 1 hour within the specified range of detection.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

Configuring Backlight

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to ECO and press [⏎] on the product.
4. Press [▲/▼] to move to Backlight and press [⏎] on the product. The following screen will appear.



- Off: Turn off the screen and activate DPMS mode. If Off is selected, it takes several seconds for the monitor to detect movement and turn on after it turned off.
- Dimming: Reduce the brightness of the screen (still turned on).

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

- The performance of Eco Motion Sensor is maximized to a specific user distance (1m) and angle (40 degrees).
- The sensor may not detect you if you are motionless.
- If you think that the mode entry message appears too frequently, increase the time setting of the Eco Motion Sensor or turn the Eco Icon Display Off.
- Avoid using radio equipment such as a walkie-talkie near the product as this may cause a product malfuction.

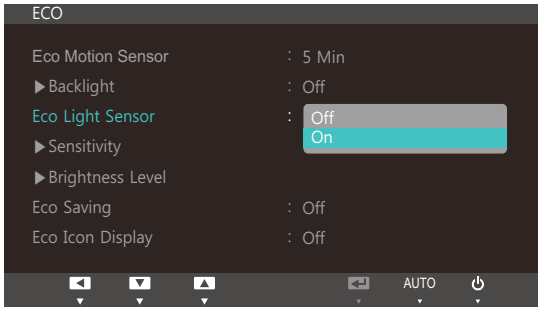
7.2.2 Eco Light Sensor

The Eco Light Sensor feature optimizes the view condition and contributes to power saving by adjusting the screen brightness depending on the ambient light intensity.

- This menu is not available when SAMSUNG MAGICBright is in Dynamic Contrast mode.
- This menu is not available when Eco Saving is set .

Configuring Eco Light Sensor

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to ECO and press [⏎] on the product.
4. Press [▲/▼] to move to Eco Light Sensor and press [⏎]. The following screen will appear.

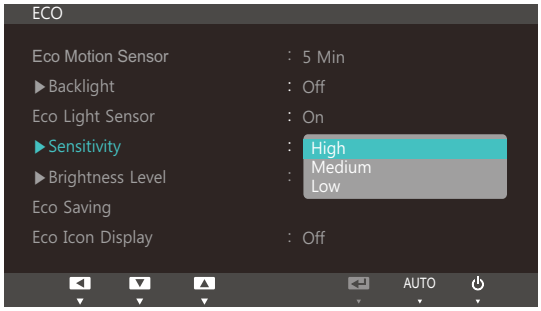


- Off: Deactivate the Eco Light Sensor function.
- On: Automatically adjust the brightness according to the ambient light intensity.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

Configuring Sensitivity

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⬚/↵] on the product.
3. Press [▲/▼] to move to ECO and press [⬚/↵] on the product.
4. Press [▲/▼] to move to Sensitivity and press [⬚/↵] on the product. The following screen will appear.

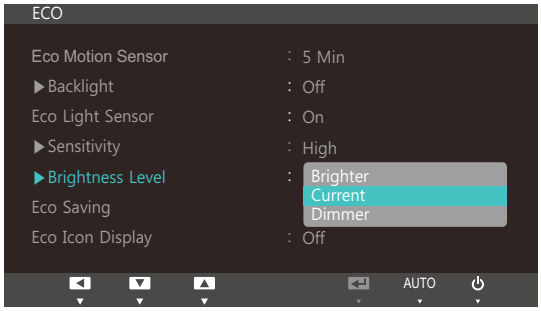


- High: High sensitivity that maximizes the varying level of screen brightness depending on the ambient light intensity.
- Medium: Intermediate sensitivity that sets a varying level of screen brightness between High and Low depending on the ambient light intensity.
- Low: Low sensitivity that minimizes the varying level of screen brightness depending on the ambient light intensity.

5. Press [▲/▼] to move to the option you want and press the [⬚/↵].
6. The selected option will be applied.

Configuring Brightness Level

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to ECO and press [⏎] on the product.
4. Press [▲/▼] to move to Brightness Level and press [⏎] on the product. The following screen will appear.



- Brighter: Increase the current brightness of the screen.
- Current: Maintain the current brightness of the screen.
- Dimmer: Decrease the current brightness of the screen.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

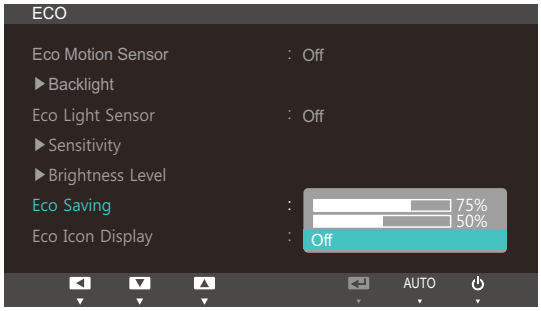
7.2.3 Eco Saving

The Eco Saving function reduces power consumption by controlling the electric current used by the monitor panel.

- This menu is not available when SAMSUNG MAGICBright is in Dynamic Contrast mode.
- This menu is not available when Eco Light Sensor is set.

Configuring Eco Saving

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to ECO and press [⏎] on the product.
4. Press [▲/▼] to move to Eco Saving and press [⏎] on the product. The following screen will appear.



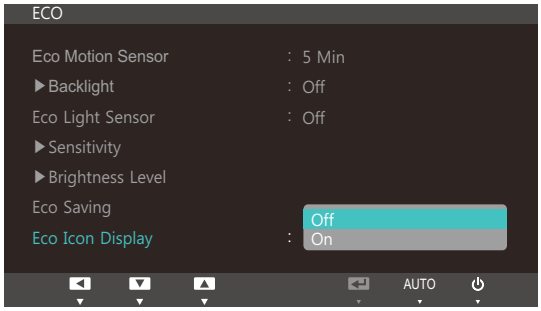
- 75% : Change the monitor power consumption to 75% of the default level.
- 50% : Change the monitor power consumption to 50% of the default level.
- Off: Deactivate the Eco Saving function.

5. Press [▲/▼] to move to the option you want and press the [⏎].
6. The selected option will be applied.

7.2.4 Eco Icon Display

Configuring Eco Icon Display

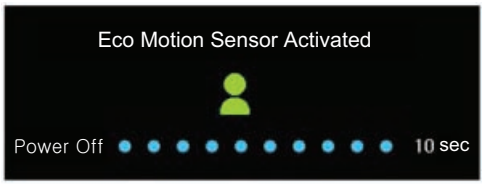
1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⬚/↵] on the product.
3. Press [▲/▼] to move to ECO and press [⬚/↵] on the product.
4. Press [▲/▼] to move to Eco Icon Display and press [⬚/↵]. The following screen will appear.



- Off: Disable the Eco Icon Display function.
- On: Display the operation status of the Eco sensor as a pop-up guide.

5. Press [▲/▼] to move to the option you want and press the [⬚/↵].
6. The selected option will be applied.

Notes



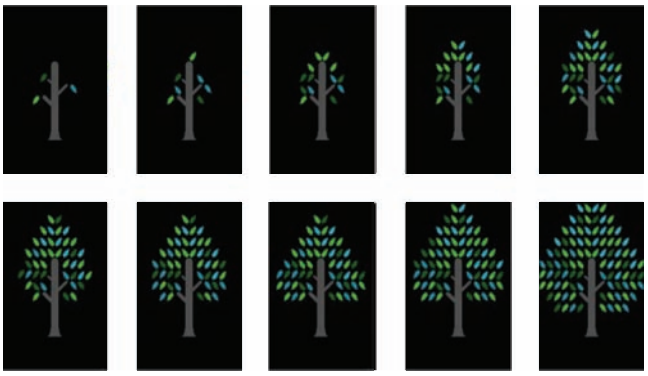
- If the monitor is left idle for the period of time to which the off timer is configured when Eco Motion Sensor is enabled, Eco Motion Sensor will activate and switch the monitor to power-saving mode.
- A 10-second countdown timer will start along with the above picture before the power-saving mode activates showing the operation status of the Eco Motion Sensor.

- If the screen brightness is adjusted according to the ambient light intensity when the Eco Light Sensor is on, a pop-up as shown above will appear showing the adjusting screen brightness.
- If the screen becomes brighter as the ambient light becomes brighter, the brightness slide bar level will increase with a sun image displayed. If the screen becomes darker, the brightness slide bar level

will decrease with a moon image displayed. The brightness slide bar will be displayed for 3 seconds after the sensor activates.

- A pop-up as shown above will appear when an energy tree completes while Eco Icon Display is On.

  If the above picture is displayed, it means the Eco Icon Display option is On. Change this setting to Off if you do not want to display the pop-up.



- The amount of energy saved by the Eco Motion Sensor, Eco Light Sensor, and Eco Saving functions will accumulate and the progress can be viewed as a growing energy tree.

  The energy tree grows as the energy savings of the monitor accumulate. Accordingly, the tree's growth will also be affected by other functions that involve power consumption such as the brightness control function.

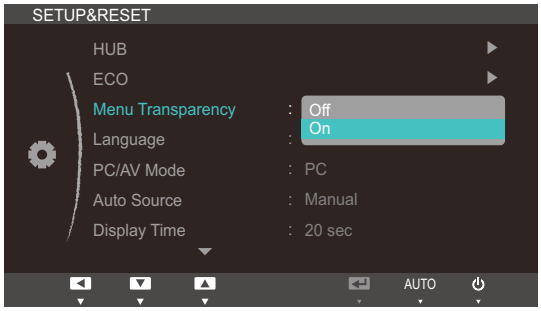
- The amount of energy savings accumulated by using the power-saving functions, such as Eco Motion Sensor, Eco Light Sensor and Eco Saving, will be calculated and represented as an amount of carbon dioxide.
- A complete energy tree will be displayed when the amount of energy savings accumulates to as much as the amount of carbon dioxide a tree absorbs in a year. This shows that your energy saving is as effective as planting a tree so that you can easily understand the accumulation of energy savings over time and its effect by viewing the progress of a tree growing.
- The progress of a tree growing will be represented as 10 different images (stages). After one full-grown tree is complete, the initial image will be restored and the number of trees will continue to accumulate. The number for energy trees will be rounded to one decimal place.

7.3 Menu Transparency

Set the transparency for the menu windows:

7.3.1 Changing Menu Transparency

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Menu Transparency and press [⏎] on the product. The following screen will appear.



4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

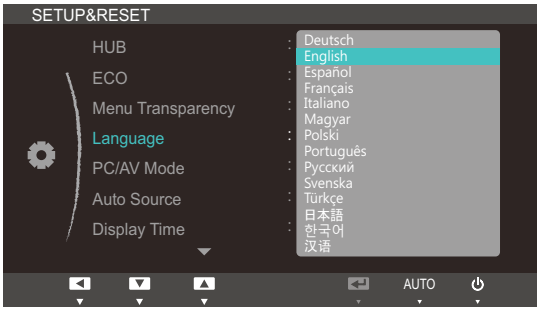
7.4 Language

Set the menu language.

- A change to the language setting will only be applied to the onscreen menu display.
- It will not be applied to other functions on your PC.

7.4.1 Changing the Language

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Language and press [⏎] on the product. The following screen will appear.



4. Press [▲/▼] to move to the language you want and press the [⏎].
5. The selected option will be applied.

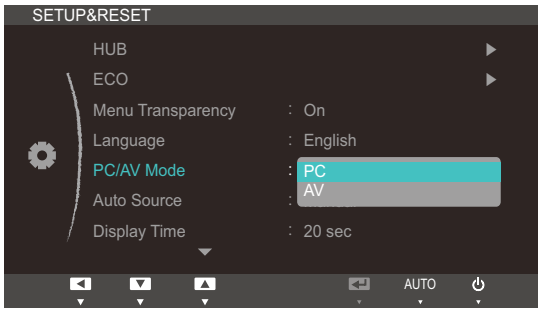
7.5 PC/AV Mode

Set PC/AV Mode to AV. The picture size will be enlarged. This option is useful when you view a movie.

PC/AV Mode is only available in HDMI mode.

7.5.1 Configuring PC/AV Mode

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to PC/AV Mode and press [⏎] on the product. The following screen will appear.



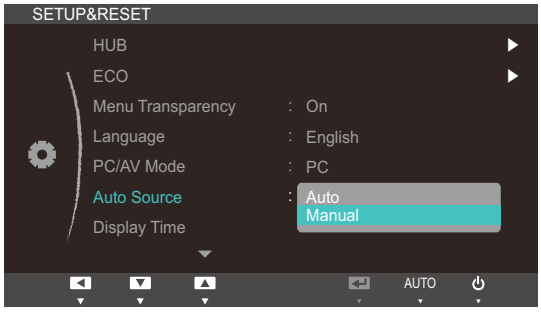
4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

7.6 Auto Source

Activate Auto Source.

7.6.1 Configuring Auto Source

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Auto Source and press [⏎] on the product. The following screen will appear.



- Auto: The input source is automatically recognized.
- Manual: Manually select an input source.

4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

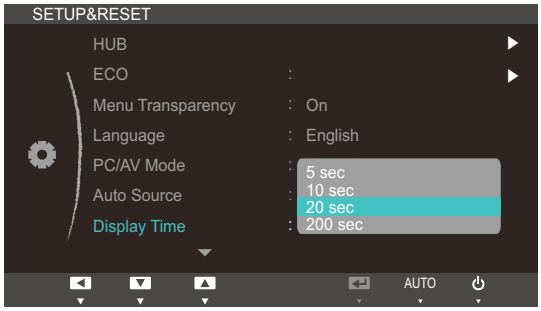
7.7 Display Time

Set the on-screen display (OSD) menu to automatically disappear if the menu is not used for a specified period of time.

Display Time can be used to specify the time after which you want the OSD menu to disappear.

7.7.1 Configuring Display Time

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Display Time and press [⏎] on the product. The following screen will appear.



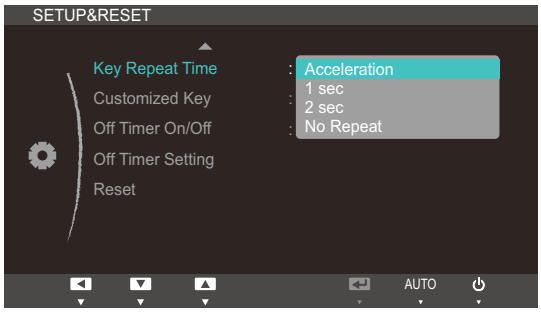
4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

7.8 Key Repeat Time

Control the response rate of a button when the button is pressed.

7.8.1 Configuring Key Repeat Time

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Key Repeat Time and press [⏎] on the product. The following screen will appear.



- Acceleration, 1 sec, or 2 sec can be selected. If No Repeat is selected, a command responds only once when a button is pressed.

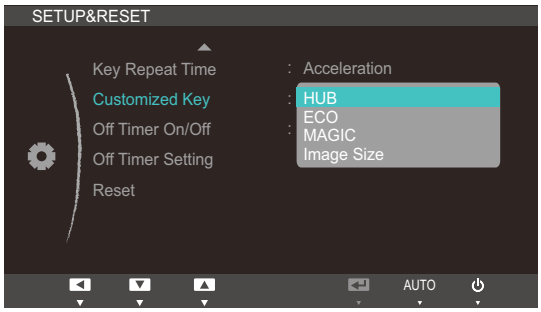
4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

7.9 Customized Key

You can customize Customized Key as follows.

7.9.1 Configuring Customized Key

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Customized Key and press [⏎] on the product. The following screen will appear.



- HUB - ECO - MAGIC - Image Size

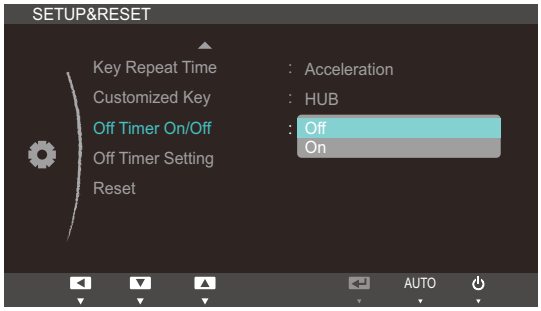
4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

7.10 Off Timer On/Off

Enable or disable the off timer that automatically powers off the product.

7.10.1 Configuring Off Timer On/Off

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Off Timer On/Off and press [⏎] on the product. The following screen will appear.



- Off: Deactivate the off timer so that the product does not power off automatically.
- On: Activate the off timer so that the product powers off automatically.

4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

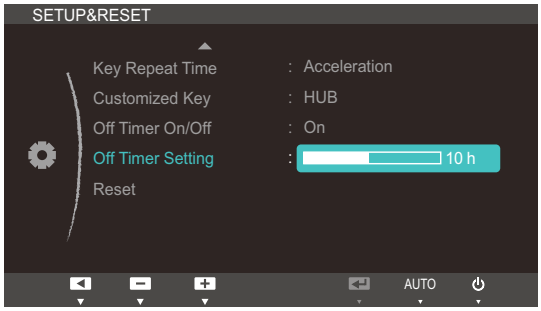
7.11 Off Timer Setting

The off timer can be set within a range of 1 to 23 hours. The product will automatically power off after the specified number of hours.

This menu is only available when Off Timer On/Off is set to On.

7.11.1 Configuring Off Timer Setting

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Off Timer Setting and press [⏎] on the product. The following screen will appear.



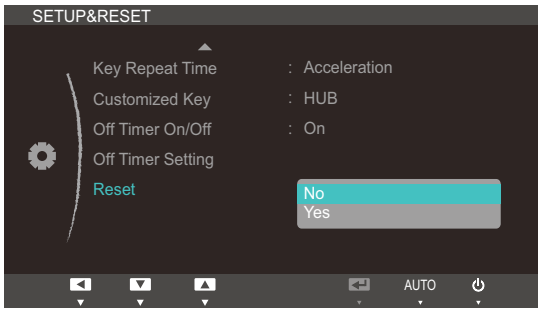
4. Press [▲/▼] to configure Off Timer Setting.

7.12 Reset

Return all the settings for the product to the default factory settings.

7.12.1 Initializing Settings (Reset)

1. Press [MENU] on the product.
2. Press [▲/▼] to move to SETUP&RESET and press [⏎] on the product.
3. Press [▲/▼] to move to Reset and press [⏎] on the product. The following screen will appear.



4. Press [▲/▼] to move to the option you want and press the [⏎].
5. The selected option will be applied.

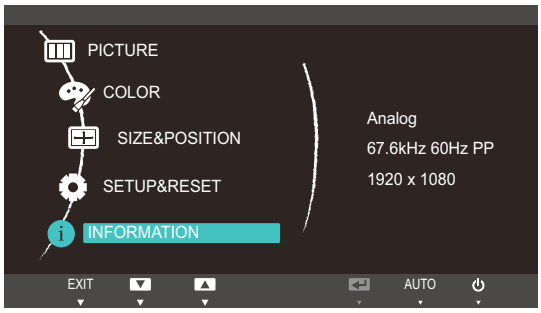
8.1 INFORMATION

View the current input source, frequency and resolution.

8.1.1 Displaying INFORMATION

1 Press [MENU] on the product.

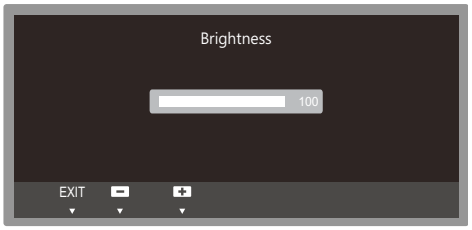
2 Press [▲/▼] to move to INFORMATION. The current input source, frequency and resolution will appear.



8.2 Configuring Brightness in the Startup Screen

Adjust Brightness using the [⊙] button in the startup screen where there is no on screen display menu available.

1 Press [⊙] in the startup screen. The following screen will appear.



2 Adjust the Brightness using the [▲/▼] button.

Volume (VOL) can be adjusted if a cable is connected to the [HDMI IN] port.

9 Troubleshooting Guide

9.1 Requirements Before Contacting Samsung Customer Service Center

9.1.1 Testing the Product

Before calling Samsung Customer Service Center, test your product as follows. If the problem persists, contact Samsung Customer Service Center.

Check if your product is operating normally by using the product test function.

If the screen is turned off and the power indicator blinks even though the product is properly connected to a PC, perform a self-diagnosis test.

1. Power off both the PC and product.
2. Disconnect the cable from the product.
3. Power on the product.
4. If the Check Signal Cable message appears, the product is working normally.

   If the screen remains blank, check the PC system, video controller and cable.

9.1.2 Checking the Resolution and Frequency

For a mode that exceeds the supported resolution (refer to "10.3 Standard Signal Mode Table"), the message Not Optimum Mode. will appear for a short time.

9.1.3 Check the followings.

Installation issue (PC mode)	
The screen keeps switching on and off.	Check the cable connection between the product and PC, and ensure the connection is secure. (Refer to "3.2 Connecting and Using a PC")
Blank spaces are found on all four sides of the screen when an HDMI or HDMI-DVI cable is connected to the monitor and PC.	The blank spaces found on the screen have nothing to do with the monitor. Blank spaces on the screen are caused by the PC or graphics card. To resolve the problem, adjust the screen size in the HDMI or DVI settings for the graphics card. If the graphics card settings menu does not have an option to adjust the screen size, update the graphics card driver to the latest version. (Please contact the graphics card or computer manufacturer for further details about how to adjust the screen settings.)

Screen issue	
The power LED is off. The screen will not switch on.	Check that the power cable is connected correctly (Refer to "3.2 Connecting and Using a PC")
The message Check Signal Cable appears.	Check that the cable is properly connected to the product. (Refer to "3.2 Connecting and Using a PC")
	Check that the device connected to the product is powered on.
"Not Optimum Mode" is displayed.	This message appears if the signal from the graphics card exceeds the maximum resolution or frequency for the product.
	Change the maximum resolution and frequency to suit the product performance, referring to Standard Signal Mode Table (107page).
The images on the screen look distorted.	Check the cable connection to the product (Refer to "3.2 Connecting and Using a PC")
The screen is not clear. The screen is blurry.	Adjust Coarse(64page) and Fine(65page).
	Remove any accessories (video extension cable, etc) and try again.
	Set the resolution and frequency to the recommended level. (Refer to "10.1 General")

Screen issue	
The screen appears unstable and shaky.	Check that the resolution and frequency for the PC are within the range of resolution and frequency compatible with the product, and if required, change the settings, referring to Standard Signal Mode Table (107page) in this manual and the INFORMATION menu on the product.
There are shadows or ghost images left on the screen.	
The screen is too bright. The screen is too dark.	Adjust Brightness(61page) and Contrast(62page).
Screen color is inconsistent.	Change the COLOR settings. (Refer to " Configuring Tint")
The colors on the screen have a shadow and are distorted.	Change the COLOR settings. (Refer to " Configuring Tint")
White does not really look white.	Change the COLOR settings. (Refer to " Configuring Tint")
There is no image on the screen and the power LED blinks every 0.5 to 1 second.	The product is in power-saving mode.
	Press any key on the keyboard or move the mouse to return to the previous screen.

Sound issue	
There is no sound.	Check the connection of the audio cable or adjust the volume.
	Check the volume.
The volume is too low.	Adjust the volume.
	If the volume is still low after turning it up to the maximum level, adjust the volume on your PC sound card or software program.

Source device issue	
A beeping sound is heard when my PC is booting.	If a beeping sound is heard when your PC is booting, have your PC serviced.

9.2 Q & A

Question	Answer
How can I change the frequency?	Set the frequency on your graphics card. • Windows XP: Select Control Panel → Appearance and Themes → Display → Settings → Advanced → Monitor, and adjust Refresh rate under Monitor settings. • Windows ME/2000: Select Control Panel → Display → Settings → Advanced → Monitor, and adjust Refresh rate under Monitor settings. • Windows Vista: Select Control Panel → Appearance and Personalization → Personalization → Display Settings → Advanced Settings → Monitor, and adjust Refresh rate under Monitor settings. • Windows 7: Select Control Panel → Appearance and Personalization → Display → Screen Resolution → Advanced settings → Monitor, and adjust Refresh rate under Monitor settings.
How can I change the resolution?	• Windows XP: Go to Control Panel → Appearance and Themes → Display → Settings and adjust the resolution. • Windows ME/2000: Go to Control Panel → Display → Settings and adjust the resolution. • Windows Vista: Go to Control Panel → Appearance and Personalization → Personalize → Display Settings and adjust the resolution. • Windows 7: Go to Control Panel → Appearance and Personalization → Display → Adjust Resolution and adjust the resolution.
How do I set power-saving mode?	• Windows XP: Set power-saving mode in Control Panel → Appearance and Themes → Display → Screen Saver Settings or BIOS SETUP on the PC. • Windows ME/2000: Set power-saving mode in Control Panel → Display → Screen Saver Settings or BIOS SETUP on the PC. • Windows Vista: Set power-saving mode in Control Panel → Appearance and Personalization → Personalize → Screen Saver Settings or BIOS SETUP on the PC. • Windows 7: Set power-saving mode in Control Panel → Appearance and Personalization → Personalize → Screen Saver Settings or BIOS SETUP on the PC.

Refer to the user manual for your PC or graphics card for further instructions on adjustment..

10 Specifications

10.1 General

Model Name		C24A650X / C24A650U	C27A650X / C27A650U
Panel	Size	24 inches (61 cm)	27 inches (68 cm)
	Display area	531.36 mm (H) x 298.89 mm (V) 20.9 inches (H) x 11.8 inches (V)	597.6 mm (H) x 336.15 mm (V) 23.5 inches (H) x 13.2 inches (V)
Synchronization	Horizontal Frequency	30~81 kHz	
	Vertical Frequency	56~75 Hz	
Display Color		16.7M (True 8-bit)	
Resolution	Optimum resolution	1920 x 1080 @ 60Hz	
	Maximum resolution	1920 x 1080 @ 60Hz	
Maximum Pixel Clock		165MHz (Analog,HDMI,USB)	
Power Supply		This product uses 100 to 240V. Refer to the label at the back of the product as the standard voltage can vary in different countries.	
Signal connectors		D-Sub, HDMI, USB UP port	
Dimensions (W x H x D) / Weight (with the stand)		568.0 X 418.0 X 224.5 mm / 5.4 kg 22.4 X 16.5 X 8.8 inches / 11.9 lb	642.5 X 466.0 X 224.5 mm / 6.3 kg 25.2 X 17.6 X 8.8 inches / 13.9 lb
Environmental considerations	Operating	Temperature : 50°F ~ 104°F(10°C ~ 40°C) Humidity : 10 % ~ 80 %, non-condensing	
	Storage	Temperature : -4°F ~ 140°F(-20°C ~ 60°C) Humidity : 5 % ~ 95 %, non-condensing	
Plug-and-Play		This monitor can be installed and used with any Plug-and-Play compatible systems. Two-way data exchange between the monitor and PC system optimizes the monitor settings. Monitor installation takes place automatically. However, you can customize the installation settings if desired.	
Panel Dots (Pixels)		Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1ppm) may appear brighter or darker on the panel. This does not affect product performance.	

The above specifications are subject to change without notice to improve quality.

Class B device (broadcast communications device for home use)

This Class B device designed for home use is registered for EMC requirements and can be used in all regions.

Recommendation - EU Only

CE

- Hereby, Samsung Electronics, declares that this Monitor is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
- The official Declaration of Conformity may be found at http://www.samsung.com, go to Support > Search Product Support and enter the model name.
- This equipment may only be used indoors.
- This equipment may be operated in all EU countries.
- This product must not be installed in a fixed location, or in a road or railway vehicle.

10.2 PowerSaver

The power-saving function of this product reduces power consumption by switching off the screen and changing the color of the power LED if the product is not used for a specified period of time. The power is not turned off in power-saving mode. To switch the screen back on, press any key on the keyboard or move the mouse. Power-savign mode only functions when the product is connected to a PC with a power-saving function.

PowerSaver	Normal Operation	Power saving mode	Power off (Power button)
Power Indicator	On	Blinking	off
Power consumption (C24A650X / C24A650U)	58 W (Without USB : 43 W)	1.0 W	1.0 W
Power consumption (C27A650X / C27A650U)	66 W (Without USB : 51 W)	1.0 W	1.0 W

- The displayed power consumption level can vary in different operating conditions or when settings are changed.
- To reduce the power consumption to 0 watts, turn off the power switch on the back of the product or disconnect the power cable. Be sure to disconnect the power cable when you will not be using the product for an extended period of time. To reduce the power consumption to 0 watts when the power switch is not available, disconnect the power cable.

10.3 Standard Signal Mode Table

- This product can be set to only one resolution for each screen size to obtain the optimum picture quality due to the nature of the panel. Therefore, a resolution other than the specified resolution may degrade the picture quality. To avoid this, it is recommended that you select the optimum resolution specified for the screen size of your product.
- Check the frequency when you exchange a CDT monitor (connected to a PC) for an LCD monitor. If the LCD monitor does not support 85Hz, change the vertical frequency to 60Hz using the CDT monitor before you exchange it with the LCD monitor.

If a signal that belongs to the following standard signal modes is transmitted from your PC, the screen will automatically be adjusted. If the signal transmitted from the PC does not belong to the standard signal modes, the screen may be blank with the power LED on. In such a case, change the settings according to the following table by referring to the graphics card user manual.

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1280 x 800	49.702	59.810	83.500	-/+
VESA, 1280 x 960	60.000	60.000	108.000	+/+
VESA, 1280 x 1024	63.981	60.020	108.000	+/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1600 x 1200	75.000	60.000	162.000	+/+
VESA, 1680 x 1050	65.290	59.954	146.250	+/+
VESA, 1920 x 1080	67.500	60.000	148.500	+/+

- Horizontal Frequency

  The time required to scan a single line from the left to the right side of the screen is called a horizontal cycle. The reciprocal number of a horizontal cycle is called horizontal frequency. Horizontal frequency is measured in kHz.

- Vertical Frequency

  Repeating the same picture dozens of times per second allows you to view natural pictures. The repeat frequency is called "vertical frequency" or "refresh rate" and is indicated in Hz.

Contact SAMSUNG WORLDWIDE

If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

EUROPE		
ALBANIA	42 27 5755	-
AUSTRIA	0810 - SAMSUNG (7267864, € 0.07/min)	http://www.samsung.com
BELGIUM	02-201-24-18	http://www.samsung.com/be (Dutch) http://www.samsung.com/be_fr (French)
BOSNIA	05 133 1999	-
BULGARIA	07001 33 11	http://www.samsung.com
CROATIA	062 SAMSUNG (062 726 7864)	http://www.samsung.com
CZECH	800 - SAMSUNG (800-726786)	http://www.samsung.com
	Samsung Zrt., česká organizační složka, Oasis Florenc, Sokolovská394/17, 180 00, Praha 8	
DENMARK	70 70 19 70	http://www.samsung.com
FINLAND	030 - 6227 515	http://www.samsung.com
FRANCE	01 48 63 00 00	http://www.samsung.com
GERMANY	01805 - SAMSUNG (726-7864,€ 0,14/Min)	http://www.samsung.com
GREECE	2106293100	http://www.samsung.com
HUNGARY	06-80-SAMSUNG (726-7864)	http://www.samsung.com
ITALIA	800-SAMSUNG (726-7864)	http://www.samsung.com
KOSOVO	+381 0113216899	-
LUXEMBURG	261 03 710	http://www.samsung.com
MACEDONIA	023 207 777	-
MONTENEGRO	020 405 888	-
NETHERLANDS	0900 - SAMSUNG (0900-7267864) (€ 0,10/Min)	http://www.samsung.com
NORWAY	815-56 480	http://www.samsung.com
POLAND	0 801 1SAMSUNG (172678) 022 - 607 - 93 - 33	http://www.samsung.com

EUROPE		
PORTUGAL	80820 - SAMSUNG (726-7864)	http://www.samsung.com
RUMANIA	08010 SAMSUNG (08010 7267864) – doar din rețeaua Romtelecom, tarif local; 021.206.01.10 – din orice rețea, tarif normal	http://www.samsung.com
SERBIA	0700 Samsung (0700 726 7864)	http://www.samsung.com
SLOVAKIA	0800 - SAMSUNG (0800-726 786)	http://www.samsung.com/sk
SPAIN	902 - 1 - SAMSUNG (902 172 678)	http://www.samsung.com
SWEDEN	0771 726 7864 (SAMSUNG)	http://www.samsung.com
SWITZERLAND	0848-SAMSUNG (7267864, CHF 0.08/min)	http://www.samsung.com/ch http://www.samsung.com/ch_fr (French)
U.K	0330 SAMSUNG (7267864)	http://www.samsung.com
EIRE	0818 717100	http://www.samsung.com
LITHUANIA	8-800-77777	http://www.samsung.com
LATVIA	8000-7267	http://www.samsung.com
ESTONIA	800-7267	http://www.samsung.com

CIS		
RUSSIA	8-800-555-55-55	http://www.samsung.com
GEORGIA	8-800-555-555	-
ARMENIA	0-800-05-555	-
AZERBAIJAN	088-55-55-555	-
KAZAKHSTAN	8-10-800-500-55-500 (GSM: 7799)	http://www.samsung.com
UZBEKISTAN	8-10-800-500-55-500	http://www.samsung.com
KYRGYZSTAN	00-800-500-55-500	http://www.samsung.com
TADJIKISTAN	8-10-800-500-55-500	http://www.samsung.com
UKRAINE	0-800-502-000	http://www.samsung.com/ua http://www.samsung.com/ua_ru
BELARUS	810-800-500-55-500	-
MOLDOVA	00-800-500-55-500	-

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Terminology

OSD(On Screen Display)

On screen display (OSD) allows you to configure on-screen settings to optimize the picture quality as required. It allows you to change the screen brightness, tint, size and many other settings using menus displayed on the screen.

HUB

HUB refers to a device that is a common connection point for multiple devices connected over a network. It is used to connect multiple PCs, video devices, office devices and/or LANs over a single network.

Dongle

Dongle refers to a device that connects to an input/output port on a PC. It contains a security key or ID so that only the user that connects the dongle can access a specified application. The dongle on this product contains data required to use Wireless USB and must be connected to your PC.

Coarse

Coarse refers to the frequency of radio wave vibrations per second. A higher frequency transmits a larger amount of data and is reflected easier. A lower frequency traverses obstacles more easily and can travel farther, but it transmits a smaller amount of data. The Coarse menu allows you to manually adjust the frequency to obtain the optimum picture quality. Adjust Coarse referring to Standard Signal Mode Table (107page) according to the performance of your product and enjoy improved picture quality.

Gamma

The Gamma menu adjusts the grey scale that represents middle tones on the screen. Adjusting the brightness brightens the whole screen, but adjusting Gamma only brightens the medium brightness.

Grey scale

Scale refers to levels of color intensity that show variations of color change from darker areas to brighter areas on the screen. Changes to the screen brightness are expressed with black and white variation, and grey scale refers to the medium area between black and white. Changing the grey scale through Gamma adjustment will change the medium brightness on the screen.

Scanning rate

Scanning rate, or refresh rate, refers to the frequency of screen refreshes. Screen data is transmitted as it refreshes to display an image, although the refreshing is invisible to the naked eye. The number of screen refreshes is called scanning rate and is measured in Hz. A scanning rate of 60Hz means that

the screen refreshes 60 times per second. The screen scanning rate depends on the performance of the graphics cards in your PC and monitor.

Horizontal Frequency

Characters or images displayed on the monitor screen consist of numerous dots (pixels). Pixels are transmitted in horizontal lines, which are then arranged vertically to create an image. The horizontal frequency is measured in kHz and represents how many times horizontal lines per second are transmitted and displayed on the monitor screen. A horizontal frequency of 85 means that the horizontal lines that make up an image are transmitted 85 000 times per second, and the horizontal frequency is indicated in 85kHz.

Vertical Frequency

One image is made of numerous horizontal lines. The vertical frequency is measured in Hz and represents how many images can be created per second by those horizontal lines. A vertical frequency of 60 means that an image is transmitted 60 times per second. The vertical frequency is also called "refresh rate" and affects screen flicker.

Resolution

Resolution is the number of horizontal pixels and vertical pixels that form a screen. It represents the level of display detail.

A higher resolution displays a greater amount of information on the screen and is suitable for performing multiple tasks at the same time.

E.g. A resolution of 1920 x 1080 consists of 1,920 horizontal pixels (horizontal frequency) and 1,080 vertical lines (vertical resolution).

Plug & Play

The Plug & Play feature allows the automatic exchange of information between a monitor and PC to produce an optimum display environment.

The monitor uses VESA DDC (international standard) to execute Plug & Play.

Index

A

About "HUB Monitor" 32

Appendix 108

Auto Source 92

B

Before Connecting 48

Blue 69

Brightness 61

C

Checking the Contents 19

Cleaning 4

Coarse 64

Color Tone 70

Configuring Brightness in the Startup Screen 99

Configuring the HUB Monitor IP 43

Connecting and Using a PC 49

Connecting Headphones 56

Connecting the Product to a PC to Use "HUB Monitor" 35

Contact SAMSUNG WORLDWIDE 108

Contrast 62

Copyright 2

Correct Disposal of This Product (Waste Electrical & Electronic Equipment) 110

Correct posture to use the product 13

D

Display Time 93

E

ECO 81

F

Fine 65

G

Gamma 71

General 104

Green 68

H

HUB 75

I

Image Size 72

INFORMATION 99

Installing the Product 26

K

Key Repeat Time 94

L

Languagey 90

M

MAGIC 58

MagicRotation Auto 31

Menu Transparency 89

N

Notice before your use of Wireless USB or USB Mode 47

O

Off Timer On/Off 96

Off Timer Setting 97

Index

P

Parts 22

PC/AV Mode 91

PowerSaver 106

Q

Q & A 103

R

Red 67

Requirements Before Contacting Samsung Customer Service Center 100

Reset 98

Response Time 66

S

Safety Precautions 5

Sharpness 63

Software Installation for Using "HUB Monitor" 33

Standard Signal Mode Table 107

T

Terminology 111

U

Utilizing "HUB Monitor" 40